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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 6 1947

THE GENERAL MEDICAL COUNCIL AND MEDICAL EDUCATION

BY

Sir HERBERT L. EASON, C.B., C.M.G., M.S.

President of the General Medical Council

My colleagues on the General Medical Council thought it desirable that I should respond to a kind invitation from the Editor of the *Journal* by trying on their behalf to explain where the concern of the General Medical Council with medical education begins and ends, and what the Council has tried to do, within the bounds of that concern, in its new Recommendations as to the medical curriculum.

Extent of G.M.C.'s Functions as to Medical Education

When the Council published the Recommendations in May, 1947, one of the full and fair reviews which they received in the medical journals drew a contrast between "a dry precision" to be found in the Council's language and the vigour and reforming zeal displayed in the language of the Goodenough report.

The General Medical Council is a body incorporated by statute to discharge the functions assigned to it by Parliament—no less and no more. The Acts passed for this purpose are not easy to read or construe as a whole, and if the Council, in describing any part of its functions, can attain precision, it need not resent the imputation of dryness. Any attempt to indicate shortly the limits of the Council's functions as to medical education is not intelligible without a preliminary statement of the reason why the General Council of Medical Education and Registration of the United Kingdom (to quote the statutory title of the Council) is concerned with medical education at all.

Why G.M.C. is Concerned with Medical Education

Parliament has constituted the Council predominantly of twenty-seven representatives of universities and of medical corporations which grant medical qualifications conferring the right of registration under the Medical Acts. It is the duty of these representatives (with seven direct representatives elected by members of the profession and five Crown nominees as colleagues) to secure "that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners" (the object of the Act of 1858 as described in its preamble). That Act contemplates that persons requiring medical aid shall be enabled to make this distinction by looking for the names of practitioners in a book compiled and kept up to date by the Council which contains only the names of "legally qualified" or "duly qualified" practitioners; and that such practitioners shall have obtained qualifications which guarantee to the public that those who hold them were at the time of qualification competent to render medical aid.

It follows that the Council, as the body which has to keep the book, the *Medical Register*, for public reference, must also be responsible for seeing (1) that no person's name is entered in the book unless the Council is satisfied that he has a qualification which guarantees his competence; and (2) that, as a condition of registration on the production of a qualification, the course of study and examinations on which the qualification is granted in fact furnish that guarantee. Hence the Council became concerned from the first with the education of all persons desirous of entering the medical profession.

General Powers of G.M.C. as to Medical Education (Medical Act, 1858)

The means with which Parliament equipped the Council in 1858 to help the public to protect themselves against the medical attentions of unqualified persons took the form of provisions requiring universities and medical corporations which grant registrable qualifications:

1. To furnish the Council as and when required with information about (*a*) the courses of study and examinations to be gone through in order to obtain such qualifications; (*b*) the ages at which such courses and examinations are required to be gone through, and such qualifications are conferred; and (*c*) the requisites for obtaining such qualifications generally.

2. To admit to examinations (including final or qualifying examinations) for such qualifications any Visitors appointed by the Council to attend and be present at such examinations.

The sanctions which Parliament has attached to these powers are that:

1. If it appears to the Council that the course of study *and* examinations (the conjunction is important) for any such qualification "are not such as to secure the possession" by persons obtaining the qualification "of the requisite knowledge and skill for the efficient practice of their profession," the Council *may* "represent the same" to the Privy Council.

2. On any such representation the Privy Council may order that the qualification shall not confer any right to registration; but the order may be revoked if His Majesty in Council becomes satisfied that effectual provision has been made, to the satisfaction of the General Medical Council, by the body or bodies concerned, for the improvement of the course of study *or* examinations (the disjunction is again important), or the mode of conducting the examinations.

Further Powers of G.M.C. as to Final or Qualifying Examinations

By the Medical Act, 1886, which for the first time debarred any person from registration except after passing a final or qualifying examination in the three fundamental branches of professional knowledge—medicine, surgery, and midwifery—Parliament supplemented the powers of the Council as to medical education by charging it with special responsibility for maintaining the standard of such examinations. The Act provides that the standard of proficiency required from candidates at such examinations "shall be such as sufficiently to guarantee the possession of the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery:" that it shall be

the duty of the Council to secure the maintenance of this standard; that for this purpose the Council shall appoint Inspectors to attend, as the Council may direct, all or any qualifying examinations; that Inspectors "shall not interfere with the conduct of any examination," but shall report to the Council "their opinion as to the sufficiency or insufficiency of every examination which they attend," and any other matters relevant to the examination which the Council may require them to report; and that the Council shall send copies of Inspectors' reports to the body or bodies which held the examinations inspected, and further copies, with any observations thereon by the body or bodies, to the Privy Council.

The sanctions which Parliament has attached to these further powers are that:

1. If it appears to the Council that the standard of proficiency in medicine, surgery, and midwifery, or in any of them or any branch of them, required from candidates at a final or qualifying examination is "insufficient" to furnish the guarantee of professional competence required by the Act, the Council *must* make a representation to that effect to the Privy Council.

2. On any such representation the Privy Council, after considering any objections by the body or bodies concerned, may by order declare that the examination shall not be deemed to be a qualifying examination "for the purpose of registration under the Medical Acts"; but His Majesty in Council may at any time revoke the order on further representation from the General Medical Council or from the body or bodies concerned.

3. During the continuance of any such order (1) any qualifications granted to persons who pass the examination do not entitle them to be registered under the Medical Acts; (2) no body concerned is to be represented on the Council; and (3) any sitting member of the Council who represents any such body is suspended from taking part in the proceedings of the Council.

Limitations of G.M.C.'s Powers as to Medical Education

Parliament seems to have contemplated in 1858 that the power to require information from universities and medical corporations about "courses of study" would so far enlighten the Council about what the Act calls "defects" in such courses as to enable the Council on occasion to represent to the Privy Council that the course of study *and* examinations for a particular registrable qualification did not guarantee the professional competence of persons who obtained the qualification.

To regard the course and the examinations in conjunction seems sensible. But while the Act proceeded to empower the Council to assess examinations by sending Visitors to see them, it gave the Council no power to assess courses of study by sending Visitors into the medical schools. The omission has curious consequences. Before the Council decides, under the Act of 1886, whether a qualifying examination is "insufficient," it can follow the method conformable both with science and with common sense by causing the examination to be visited or inspected on its behalf. The standard maintained at examinations, and in particular at qualifying examinations, which is essential for the safety of the public depends much more on the efficiency of clinical and other teaching in medical schools than on any influence which the Council can exert by visiting or inspecting examinations; but the Council has no right to acquire information otherwise than on paper about the course of study which leads up to an examination.

Though, therefore, the Council's assessment of the sufficiency of a curriculum depends on the answer to the question whether the course of study *and* examinations for a qualification, taken together, sufficiently guarantee the professional competence of candidates who obtain the qualification, and the Council has, in homely language, been given the job of assessing the sufficiency both of examinations and of courses of study, it has not yet been given the tools without which it is powerless to do the more important part of the job—namely, the assessment of the sufficiency of the courses. All that is needed to reconcile the law with the apparent intentions of the framers of the Act is to give the Council the same power to visit medical schools as it has had since 1858 to visit examinations; and it is for this simple and pragmatic reason that the Council concurs with the recommendation of the Goodenough Committee in favour of such an amendment.

G.M.C.'s Recommendations on the Medical Curriculum

Universities and medical corporations who wanted their qualifications to continue to be registrable began to ask very soon after 1858 how they were to safeguard the position assigned to those qualifications by the principal Act. It might have frightened, but could hardly have helped, a body which was designing a syllabus of instruction, or still more a teacher who was drafting a course of lectures, to impress upon them or him that a qualification may be deprived of its value as a title to registration if at any moment the Council ceases to be satisfied that it guarantees professional competence when it is obtained; and the comparable provision of the Act of 1886 as to the standard of proficiency to be required from candidates at final or qualifying examinations did not in itself shed further light on the problem.

The practical question was: "What minimum course of study, and what minimum examinations, will from time to time satisfy the Council?"; and the Council, itself a microcosm of the world of medical education in that it represents directly all the bodies granting registrable qualifications, and indirectly many of the schools where candidates for the qualifications are taught, has recognized from the sixties onwards that bodies and schools are entitled to a practical answer. That answer has necessarily taken the form of public statements, revised periodically as knowledge of medicine advanced, of the subjects in which students should be instructed and examined, the order in which the subjects should be taken, the period to be covered by the curriculum and its main subdivisions, and the general scope of the examinations, for any qualification which the Council will continue to regard as entitling its holders to registration.

The statements in which the views of the Council have been published are in principle, as they are now (1947) called, Recommendations to Bodies and Schools. For they indicate only a minimum of instruction and examination, do not impose a detailed or a uniform curriculum, and designedly leave bodies and schools free to teach and examine at a standard above the minimum, and, whether they do so or not, to provide courses and set examinations which, subject to the attainment of the minimum, may vary as much as the bodies and schools please. In short, all that the Council do or ever have done in making recommendations as to the medical curriculum is to indicate in concrete terms, for the assistance of bodies and schools, how the Council will for the time being interpret the references in the Medical Acts to standards of medical education which Parliament in its wisdom has inevitably laid down in the abstract.

NOTES ON G.M.C.'s RECOMMENDATIONS (1947)

Space and time forbid more than a brief series of notes on those parts of the new Recommendations of the Council as to the medical curriculum which are perhaps of special interest.

Importance of Education of the General Practitioner

The Council found itself in general agreement with the Goodenough Committee in the following statement of the main object to which the minimum curriculum for a registrable qualification outlined in the Recommendations should be directed:

"In deciding the importance that should be attached to the various subjects and the type of instruction that should be given, the bias should be towards the needs of the future general practitioner. All parts of teaching or of clinical practice that relate only to the fields of work of the clinical or laboratory specialist should be reserved for postgraduate education, and adequate attention should be given to those problems which constitute a large part of a general practitioner's work."

Minimum Length of Curriculum

The Goodenough Committee, who were entitled to anticipate legislation which Parliament has not yet been invited to approve, found themselves able to recommend a reduction in the minimum length of the curriculum to four and a half years. They arrived at this happy result by assuming, not only that the labourers in the field of medical education would effect "a ruthless pruning of the curriculum," but also that a compulsory year of internship after qualification would be required of entrants to the profession, so that some things necessary for independent medical practice need not be imparted to the student because they would have to be imparted to the intern. The Council was unable to hold out similar hopes of a reduction in the minimum length of the curriculum because (1) its statutory responsibilities in relation to medical education oblige it to deal with things as they are and not with things as they may be; (2) even if a year of internship required by law were in sight, the Council does not agree that any part of that year should be spent in completing incomplete instruction given before qualification; and (3) the Council holds in principle that, if instruction in any subject is necessary in order to make a student a safe practitioner on the public, adequate time for his instruction in the essentials of the subject must be found before he takes a final or qualifying examination. The Council, as a trustee for the public, did not therefore think it right to encourage any belief that professional competence at the time of qualification could be sufficiently guaranteed except after a curriculum lasting at least five academic years (made up of a period of pre-clinical studies of at least five academic terms, an introductory clinical course lasting three months, and a subsequent period of clinical studies covering not less than thirty-three months).

Subjects of the Curriculum

General and Pre-medical Education

On this, not the least important, part of the education of candidates for the profession, which extends backwards from the moment of admission to a medical school to a point in secondary education which may be reached at a tender age, there is little difference of opinion about what is wanted, but much difficulty in making sure that applicants to deans for admission to schools have always got it. What is wanted is that potential doctors should have a good general education, and that this education should not omit the principles of physical and biological science; but that, above all, it should not lose its breadth by permitting excessive concentration either on general or on scientific subjects. The Goodenough Committee, who were entitled, if not bound, to dip into the future, found that this end could not be attained without changes in the secondary-school curriculum and examinations, more and better teachers of general science in secondary schools, and changes in the arrangements for teaching physical and biological science in the medical schools. The Council, confined as it is within the boundaries of present conditions, could do no more in its Recommendations than postulate that admission to the study of anatomy and physiology should be open only to students who have passed a preliminary examination in general education which admits to a British or Irish university, or is recognized as equivalent thereto by such a university or by a medical corporation; and have also passed an examination in physics, chemistry, and biology conducted or recognized by the university or corporation concerned. For the rest the Council can only leave to the authorities of schools the responsibility of selecting for admission, in competition for the places available, those candidates who seem to an informed judgment most likely to make good doctors at least five years afterwards.

Period of Pre-clinical Studies

The Goodenough Committee's criticisms of medical education as it is include the statement that "there is an urgent need in every school for a new viewpoint on the part of the teachers of the pre-clinical subjects and for the drastic elimination from the curricula, and therefore from the examinations in these subjects, of a mass of detailed information which serves only to clutter up the student's mind and to deaden his interest in subjects that can and should make the liveliest appeal to him." Parliament has not charged the Council to teach teachers of pre-clinical or other subjects how to teach, and the Council has from the first been scrupulous to refrain from seeming to assume any right to do so. It is therefore not in a position to go far to satisfy the hopes that this statement must have excited in the minds of candidates if not of others. But it has done what it thinks it can by way of Recommendations to leave the way clear for any change of heart in teachers and examiners in pre-clinical subjects that may in fact be desirable.

Human Anatomy.—The Council has adhered in the Recommendations to its former view that instruction in human anatomy should include dissection of the whole body. But in the introduction to the Recommendations it is pointed out that: "If on a review in detail of the present methods of instruction in dissection it should be found possible to shorten the course without sacrifice of essentials, the saving of time will also contribute towards the amelioration of the position indicated by the comprehensive finding of the Goodenough Committee."

Social Medicine and Public Health.—By omitting, on the other hand, from the Recommendations any express provision as to instruction in social medicine during the period of pre-clinical studies, the Council believes that it can for the moment best encourage full liberty of scope and method in the teaching of this subject, which, as the Goodenough Committee say, "can be satisfactorily settled only in the light of experience gained from experiments." It may perhaps be safe to assume that no course in human anatomy and human physiology is likely to leave the student without enlightenment on "the factors concerned with the promotion and maintenance of mental and physical health" and "the fundamental importance of health and the prevention of disease" which the Committee specified as aspects of social medicine to which he should be introduced during the period of pre-clinical studies.

Introductory Clinical Course

Whether the apparent finiteness of the scientific subjects or the infinite variety of clinical medicine attracts particular students more or less, it seems undisputed that the transi-

tion from pre-clinical to clinical studies should be eased and emphasized by the provision of an introductory clinical course. The Recommendations therefore contemplate a course, lasting three months, of instruction in the methods of clinical examination which will precede the beginning of clinical studies.

Period of Clinical Studies

Medicine, Surgery, and Midwifery.—Since the Council could not assume, as the Goodenough Committee did, that a compulsory year of internship would follow qualification, the Recommendations provide in *medicine* for a period of six months to be spent in medical appointments in hospital wards and in a medical out-patient or equivalent department (whereas the Committee appear to contemplate a slightly shorter period partly spent in work leading up to internships); and in *surgery* for practical instruction in minor operative surgery on the living (which the Committee think had better be postponed to the period of internship).

Three important changes in the Recommendations as to instruction in *midwifery* have been made with the support both of the Council's Inspector in that subject at the Inspection of Qualifying Examinations, 1942–6, and of the Goodenough Committee. The number of cases of labour which every student should be required to attend has been reduced from the minimum of 20, often found impracticable, to a minimum of 12 (the first 5 at least to be attended in the lying-in hospital or wards). It is provided that a student should not be admitted to a final or qualifying examination in midwifery unless it is properly certified that (1) in each of the cases covered by the certificate the student has been in personal attendance on the patient during the whole course of labour; and (2) no such case has been credited to more than one other medical student or to more than one pupil midwife.

Paediatrics, Psychiatry, Social Medicine.—The Goodenough Committee give special prominence to paediatrics, psychiatry, and social medicine as the three branches of medicine in which "the developments . . . in the training provided" for students need "fuller consideration than the branches in which few changes are required." The Council in revising its Recommendations concluded that further weight ought to be given to these subjects on the different ground that since the previous revision in 1936 the advance of knowledge, combined with a veering of popular as well as professional interest towards them, means that there is more to be taught and learnt about them, and that a curriculum primarily designed to equip the potential general practitioner must give new prominence to them as branches of medicine. The Council has therefore done what is in its power to promote the recognition of paediatrics, psychiatry, and social medicine as major subjects in the curriculum by assigning to each subject for the first time a separate main heading in the Recommendations, and by suggesting alterations, not only in what the Goodenough Committee called "emphasis and approach" in relation to these subjects, but also in the kind and length of instruction to be given in them.

(1) The Recommendations contemplate that time should be found for a clinical clerkship in paediatrics lasting three months (as compared with the period of one month recommended in 1936).

(2) The Recommendations emphasize the importance of giving first place in the instruction in psychiatry to potential rather than established disorders of the mind, and of securing that throughout the period of clinical studies (and not only during the time specifically devoted to psychiatry) the attention of the student is continuously directed to the interrelation of physical and psychological aspects of disease.

(3) Social medicine, by that name, is a young and vigorous graft on the old public health tree. To the Goodenough Committee it signified a conception of medicine "that regards the promotion of health as a primary duty of the doctor, that pays heed to man's social environment and heredity as they affect health, and that recognizes that personal problems of health and sickness may have communal as well as individual aspects." The Committee thought it essential that "the ideas of social medicine," so described, "must permeate the whole of medical education," and were of opinion that for this purpose no less was needed than "a new orientation of medical education, a big expansion in the social work of teaching hospitals, and fundamental changes in the outlook and methods of most of the teachers."

The problem that presented itself to the Council was, of course, much more restricted, but perhaps not much less difficult. How much, and what kind of, instruction could advisedly be specified so as, on the one hand, to give medical schools and students some idea of the minimum amount of the subject which teachers should attempt to cover, and on which candidates at final or qualifying examinations must expect to be questioned; and, on the other hand, to avoid any apparent encouragement of stereotyped form or method in presenting a subject on which the Goodenough Committee pointed out that "the arrangements which a medical school should make to secure that its students are properly trained in social medicine are matters on which there is much room for experiment"? The answer of the Council as expressed in the Recommendations is (*a*) to bring up to date the provision made in 1936 for instruction in the part of the subject then described as "hygiene and public health"; and (*b*) to emphasize that throughout the period of clinical studies the attention of the student should be continuously directed to the social aspects of medicine by such means as the utilization, for purposes of instruction, of public health and social welfare services, health centres, and ancillary workers in the medical field.

After-care and Rehabilitation: Chronic Sickness

After-care and rehabilitation also appear for the first time under a separate main heading in the Recommendations; and the Council has drawn attention in the introduction to the Recommendations to the great and growing importance of the investigation and treatment of chronic sickness as a subject of instruction for students.

Recommendations as to Professional Examinations

Much has been done by the Council in the revision of the Recommendations of 1933 as to professional examinations to make the Recommendations easier to follow, and to enlarge the discretion of examining bodies in matters in which the Council no longer thinks the public interest requires it to interfere. But I propose to concentrate attention, in the last of the many paragraphs in which I have tried to give a short account of the Council's long task, on a few new or amended Recommendations which will, I hope, interest those who read the Educational Number as prospective candidates. (1) The Council recommends that at least two examiners should adjudicate on all written papers. (2) It emphasizes that proper time should be given to practical work in all clinical examinations. (3) It recommends that every candidate at oral and clinical examinations should be examined by at least two examiners, who should settle the candidate's marks jointly. (4) It

recommends that no part of a final or qualifying examination should be taken before the end of thirty months of clinical study, and that the examination should not be completed before the end of the period of clinical studies of thirty-three months. (5) It has abandoned the recommendation of 1933 that candidates should be required to complete the three portions (medicine, surgery, and midwifery) of the final or qualifying examination within a period of nineteen months.

It would be less than frank not to add that the Council's decision on the last point was not inspired by sympathy with the chronic student but by confidence that examiners can be trusted to guard the public against candidates incapable of passing at a reasonable standard. In short, the aim of the General Medical Council is to ensure that the medical practitioner will not (to borrow from H. A. L. Fisher) have to navigate the sea of knowledge without the charts and compass of an adequate education.

PSYCHOLOGY IN MEDICAL EDUCATION

BY

JOHN RICKMAN, M.D.

President, Institute of Psycho-analysis, London

An important event in the professional life of every medical man, if not the most important event, is his dealing with patients in the first months of general practice. It is the first test of the young practitioner; it is also of course a test of his professional education. This article will discuss some of the difficulties, and the reasons for the difficulties, in the transition from student to practitioner, with special reference to the acquisition of professional skill in and understanding of the relation of a sick person to his medical adviser.

Changes in Medical Education

There are two ways in which a doctor can get instruction. He can be taken by his teacher into the patient's environment and be told there what factors have led to the ailment, what difficulties lie in the way of the remedy, and what chances there are, all things taken into consideration, of recovery. The teacher and his pupil make an entry into the patient's life, they enter his region of "social space" and do what they can to bring some easement within it. The apprenticeship was an example of this kind of medical education. The second, the more modern way, is different: the patient is drawn into a region where he is isolated from usual social contacts and interests, and is examined by a number of hospital departments which have specialized on one or other aspect of the mechanism of his body or mind. The criterion on which the laboratory departments report is basically a statistical one: the findings lie within the normal limits for the age group of the patient examined.

Contrasting these two generalized methods of instruction and calling the former "individual or apprenticeship" and the latter "statistical or hospital," we can see advantages and disadvantages in each. When there is but one instructor, usually unsupported by the large and complicated apparatus of a hospital organization, the latest discoveries in physiology and pathology are apt to suffer some neglect; there is pressure exerted on both teacher and pupil by the environment of the home to consider before all things the present emergency, including the social and financial strain of having a sick member on their hands. The patient is seen in the world in which he lives. Under such conditions it is admittedly not easy to examine in detail the workings of his various organs, but it is difficult not to see the way his life is tied in bonds of affection and dislike, in aspiration and despair, to his relatives and the social group of which he is a member. The apprentice to the general practitioner penetrated into the home and stood both to gain and to lose by that medical relationship.

A patient sent to hospital (to use the usual phrase) enters an unfamiliar region of social space. Within that organized system of research and therapy the easiest objects of study are the "parts of the machine"—those portions of the individual patient which are most susceptible to test and measurable reaction. In such an environment of isolation from the personal and social forces which act upon the personality it is difficult to get a comprehensive understanding of the personality of the patient. An over-all view is a greater achievement of clinical synthesis in a hospital than in a house; a thoroughgoing mechanistic analysis of the patient is more difficult in the home than in the ward.

The task of medical education is to develop fully the capacity both for clinical synthesis and for mechanistic analysis. The questions arise: What conditions most favour this double development? What factors make those first few months of general practice something to be anticipated with dread and looked back on with relief as a thing long past? That many practitioners are eased in this transition by the senior partner of the firm they join, and thus enjoy a postgraduate apprenticeship, shows that the present—we do not know yet about the future—organization of medicine can allow the filling up of this gap in technical education.

How does the Doctor Spend his Day and his Energy?

Odd though it may seem, there has never been a "job analysis" of the doctor's working day, or, if such an investigation has been made, it has received almost no publicity. It would appear that medical education has developed without a detailed reference to the job for which the student is being trained. How much of the doctor's time and how much of his skill are employed in the diagnosis and therapy of injuries, disorders, or normal processes—for example, confinements? How much of his day is given to specific planned acts of therapy, how much to diagnosis, and how much to travelling? Nor do we know how his time is divided between the age groups, the occupation groups, the income groups, or disease groups, or how far the proportions vary with urban and rural and other social and geographical divisions.

Important as these facts would be, one would think, both for teaching and for planning the future of a health service, even such an investigation of the relatively easily measurable units of time would ignore the subtler but perhaps more important factor of "concern." The doctor has concern for his patient: he is worried if he does not know what is wrong with him or how to bring him relief for his suffering. It is this concern which makes him feel the personal and human value of his work in the social—or, if you will, the spiritual—life of the community; it is something which makes him regard the financial return as only a part of the reward of his profession.

This factor, so important to the vitality of the profession and to its growth, cannot easily be brought within the scope of the mechanistically oriented education of the student. One does not have this concern-feeling for organs but only for a person, a fellow human being; one cannot book-learn it, it comes from a personal relationship.

The worries of the first few months of the general practitioner's life, or even the first few years, spring not from a need to harden his heart to suffering but to soften it so that he can feel his way into what the patient is going through in his suffering and yet keep his head. It is the attribute

of professional competence to appraise the feelings of the patient, through sympathy with him, without losing objectivity and judgment of the situation as a whole. To get this over-all appraisal of the situation is often one of the main motives which lead the patient to seek professional advice, and the doctor cannot give it unless he has faced all the issues which confront his patient.

Though the patient may have to move into the "hospital area" of social space and the doctor may have to move into that of the "family area," the appraisal can best take place in the neutral ground of the doctor's consulting-room. He must make it neutral to all influences and prejudices if it is to act as a "diagnostic and therapeutic area" in which patient and practitioner can both move with ease and mutual understanding.

The Medical Interview

One thing must be assumed in medical work: a patient never consults his doctor without good and sufficient cause. He may make a great fuss over what seems a trivial complaint, or he may dismiss as trivial symptoms of the gravest significance, but the cardinal fact is that he has come to a point when he cannot manage by himself something concerning himself—there is a breakdown in adjustment processes. Let us leave on one side those seemingly easy cases—for example, a cut hand needing a few stitches (though even such events may be indicators of accident-proneness or some such short-cut solution of a long-standing trouble)—and all of those cases which occasion the doctor no concern. What remain? Just those cases—and taken over the year how numerous they are!—where the physical-mechanistic solution to human suffering has failed.

Two questions the practitioner has to put to himself: What is wrong? and, no less important, How ill is the patient? A repetition of a visit to the surgery with the same worried expression about the same "trivial" complaint, or a new one equally trivial, is a distress signal: the degree of the maladjustment is not to be measured by the degree of dysfunction of the organ system complained of—the patient is more ill than his body gives warrant for. What should the doctor do—judge the situation by the sole criterion of physical disability and dismiss the rest as "imagination," or assume that where there is much complaining there is something paining? And if this be the case, how does one discover the cause if it is not in the body? Is the registered medical practitioner to have traffic with the woes of the soul? Perhaps he need not go quite so far.

It was said that the consulting-room should be a sort of neutral ground where everything can be considered dispassionately (which is not the same as cold-heartedly) and without prejudice. If the patient has some worry on his mind his original complaint may be only a point of entry to the consulting-room, where he wants to get rid of his burden. Then the important thing is not only to let him talk but for the doctor to let himself listen. When it has been acquired, the art of listening is not a tedious one-way traffic but a technique of getting the patient to unfold the life-history of the suffering lying at the root of his present complaint as it is to be seen in the framework of the development of his personality as a whole: a history-giving rather than a history-taking. How can this art be acquired?

No Research without Therapy; No Therapy without Research

This is rather a grand way of saying, among other things, that between patient and practitioner there must be a two-way traffic.

The sufferings which lead to "trivial or pointless complaints," no less than an easily spotted neurosis, are basically hidden from and are confused for the patient himself; they are bound up with the development of his personality and are an expression of conflicting trends within it. If their solution were easily within his capacity he would have solved them long ago; the fact that he comes to his doctor is sufficient evidence that his powers of adaptation have for the moment at least broken down. He cannot cope with the present problems of his life because he has to solve and satisfy unresolved and uncompleted emotional situations of the past. The aim of the interview is to allow the patient to disclose as fully and as freely as possible the history of his development. This disclosure the doctor must meet with sincerity of purpose and dispassionateness and he must not lose patience in the face of failure.

These qualities are among those which are prerequisites in the research worker. The solving of the problem of mental pain in the individual patient is not possible without this research quality in the therapist, and his greatest contribution to the two-way process is less often advice than an understanding of the problem at issue.

Research workers who try to invade the private lives of human beings to wrest from them answers to abstract research problems seldom get far with their researches into the cause and cure of mental suffering, and their work usually remains in the academic library for which it was written. People can disclose the sources of their mental suffering only during the actual experience of relief of that suffering. The so-called "normal psychology," which takes no account of the influence of pain, anxiety, guilt, and grief on human behaviour, need not for long detain the medical student in his preparation to deal with people and their problems in real-life situations.

Is Psychiatry yet Another Specialty?

When a patient comes into a consulting-room the doctor has before him only the small segment existing in the present of an organism with an extension in time. This organism, as was recently said by a writer in the *Lancet*, began as a speck of jelly and will end some day as a life-size corpse. It grows by constant interaction with its environment, passing through different physiological phases and as many different psychological and social orientations. The egoism of the infant partly gives place to the passions of love and rage of the child (both, often and most embarrassingly, directed to the same person), and later to the stormy mixtures of adolescence, then to a fairly stable maturity, and finally shrinking in body and mind in old age (Shakespeare has said that better, but it bears repetition). Each age and stage has its problems, which when unsolved are never completely left behind: the doctor has to listen for the murmur of those old and unresolved complaints beneath the apparent preoccupation with present ills.

The study of these problems is called psychopathology; the application of such knowledge to the suffering of the individual is a part of psychiatry (and of groups, "sociatry"). The training of the student to elicit a history (the much-guarded history of the development of the personality) is one of the duties of his psychiatric teachers. Training for the assessment of the retardations of development, intellectual and emotional, is also part of psychiatric teaching.

The whole range of neuroses, marital maladjustment, character disorders, delinquency, and insanity; the wider range of so-called psychosomatic affections, and the still wider range of mild and temporary worrying upsets (which are partly due to misery of spirit or insecurity, to lack of love or incapacity to give and receive affection and find

rest of body and mind)—all these are medical problems which get help from psychiatry, and sometimes only there. Is psychiatry a specialty? It stands outside the physical-mechanistic separatism which was till perhaps recently the prevailing convention in modern medicine, for if it is to do its job it must take a wide and time-spanning view of the personality in its social setting: it is of course no less a specialty than medicine itself.

On Bringing the Student to the Patient

(*a*) The medical student should be brought at an early stage in his career into relation with patients. For example, when dissecting he should have periodic turns of duty as a dresser in the casualty out-patients department; even a sprained wrist or ankle should be seen in relation not only to anatomy but also to social disability. The young student should be relieved of some of his load of corpses and learn to carry live burdens. (Some of the apparent immaturity of the medical student is a reaction to the abstract and impersonal nature of his studies, which frustrate his clinical inclinations. It is a sad thing that the student's first "patient" is a corpse.)

(*b*) Much more time should be *lived* in medical institutions. Even in the pre-clinical years the student could learn some of the routine of the ward as a student orderly, both to have an insight into how patients behave and what they feel when doctors are not present, and to get some first-hand knowledge of the ward as a community. A few weeks in epileptic and mental defective colonies, in tuberculosis and other sanatoria for chronic cases, would widen his understanding of the chronically sick. His status on some of these visits would be nearer to that of the nursing than the medical staff; on others he should go as assistant to the doctors.

I might illustrate the value of the good nurse's approach to a case by the following example: A patient in a public ward suffered from nocturnal attacks of respiratory and other kinds of distress. His house-physician and the registrar were asked by a doctor patient in the same ward, as a matter of professional interest, what precipitated the attacks. They did not know; medical examination gave no clue. The patient's nurse was asked and gave an answer without hesitation: the attacks followed the visits of a particular relative. Two comments here: first, the nurse, whose knowledge of anatomy, physiology, pathology, and clinical medicine was of high nursing standard, used that knowledge in a quite different way from the house-physician and registrar: the latter made it the sole theoretical instrument of aetiology and diagnosis; the former (perhaps freer because she had no self-imposed duty to limit her thinking to what she read in books) was able to observe the facts as a whole. The doctors had not asked about the effect of visitors; it had not, presumably, come into their theories of aetiology. The second point is that the nurse observed the patient in a wider region of biological activity, that of the family—that is, in a social setting. The doctors saw only what lay in the bed, not even what came to the bedside. Which, in this case, was the more clinical and which the more veterinary observer? Of course, such a question should not be put: it is a question framed with reference to "academic subjects" and not to scientific method. Rather let us ask, Which of the two provided himself or herself with the greater number of frames of reference, and used them in an integrative way?

Speaking aphoristically, the best medical instruction is clinical—that is, bedside. If the patient's illness and not "a disease entity" be the subject of instruction, the best bed for this purpose is the patient's own, the next best is one that the hospital pupil has to be responsible for, the third best is that which is in hospital and which someone else looks after: the first educates the G.P., the second the nurse; the medical student in this respect comes off third best. I am referring to learning about the illnesses of actual people, not about diseases; and, further, I am saying no more than that this kind of bedside or clinical experience—though it does not come into examination-ridden curricula—is important for the student and the young practitioner.

(*c*) He should at first be taken by almoners and psychiatric social workers, and later go alone, on follow-up visits to a selection of the patients he has seen and treated as out-patients and in the wards. He should realize how large is the gap between the "social space" of the family and that of the hospital, and he should be taught the techniques for lessening and bridging that gap—for example, the endeavours made increasingly nowadays to create within the hospital and convalescent home transitional communities where the recovering patient can make an effective rehabilitation.

(*d*) He should have experience in all branches of the mental out-patients department, in intelligence testing, in the social workers' department, and above all in the practice of psychiatric interviewing.

(*e*) He should interview relatives of patients with the same care as patients themselves—time spent on learning interview technique is repaid a hundredfold in his general practice.

(*f*) Anything that brings the student to the patient, to his home, to his factory should be welcomed, and will help to make the transition from medical school to professional life as easy and as fruitful as possible.

(*g*) Medical education should proceed on the principle (hard though it be to apply) that knowledge gained through the shouldering of responsibilities is the best sort of medical knowledge to have.

On Using the Ex-student's Experience

A sample survey might be made one, two, and five years after leaving medical school, asking general practitioners what comments they would like to make on the curriculum of their training. Such opinion-taking would be specially useful to estimate the desirability of continuing experimental changes in the curriculum and dropping those that were not expedient.

The Doctor–Patient Relationship

An experiment is in train to evolve a national health service. The stability of the profession *vis-à-vis* the patient population will ultimately depend on the doctor's capacity to meet the patient's need to be understood as a person. If treated as a merely physical mechanism composed of parts and system the patient will turn more than ever to self-medication or to unqualified persons. The existence of quacks* is a reproach to the training and to the practice of the regular profession. (A survey of medical needs and medical aids, if realistic, would have to include the activities of the quack, his clientele, and his method of work.)

* A quack may be defined as a person who seeks to establish a quasi-professional relation to a client (or patient) without having first submitted himself to a course of training regarded as adequate by the teachers in that profession; who makes no consistent endeavour to integrate any discovery he may make in the exercise of the profession to the body of knowledge already existing—to the end that the range of experience of the next generation of students may be improved; who when in a difficulty with diagnosis or treatment does not call in a brother-practitioner, laying before him all the facts known, being ready to accept the advice offered, or who would not be willing, if called in by a brother-practitioner, to put his experience fully at his disposal and return the patient to his own practitioner, not trying to keep him for himself; and who is unwilling to submit himself to the discipline of the organizations of his profession in matters affecting his ethical relations to his patients.

The definition turns on four things: on the willingness to learn in due humility from an older generation, to give without arrogance to the next generation, to treat one's own generation with generosity as equals, and to submit to a social code.

Most of the articles on quacks and quackery enlarge on the practitioner-patient relationship; ought not more consideration to be given to the relation existing between persons in the same field of social activity—namely, brother practitioners?

The remedy for the problem of unqualified practice lies in better medical qualification—a training which meets the needs of those worried and distrusting patients who cannot define their ills and who turn from one adviser to another till they find a listener.

The organization of a national health service will fail of its purpose if scope is not given in fullest measure for the relationship between doctor and patient to be one of personal trust and confidence and that continuity of interest in the individual patient which springs from professional "concern."

STATISTICS IN THE MEDICAL CURRICULUM?

BY

A. BRADFORD HILL, D.Sc., Ph.D.

Professor of Medical Statistics at the London School of Hygiene and Tropical Medicine

In maintaining, with customary vigour, the value of statistics in the furtherance of medical research Prof. F. A. E. Crew was fain to admit that "the very mention of the word 'statistics' evokes a peculiarly strong emotional reaction on the part of the great majority of medical men and women. I think it is fair to say," he continued, "that by the profession as a whole an ignorance of, and a scornful and distrustful attitude towards, statistics are regarded as the praiseworthy attributes of a robust personality."[1] Whether that attitude is a prerogative of the medical profession is of course gravely open to doubt. The daily misuse of statistics of every shape and kind perhaps makes sceptics of us all—or, far worse, leads us to accept uncritically figures which fit in with our pet beliefs and to reject, equally uncritically, those that do not. With the doctor it may be, as I have suggested elsewhere,[2] that both selective and environmental factors contribute to this state of "allergy." The person who is taking up medicine as a career may well be one whose interests lie mainly with individuals—sick persons—and far less, if at all, with the statistical concept of the group. In his clinical training this attitude may be further encouraged by concentration on the specific case, by too close an attention to the average to the neglect of the variation round it, and by a communicable distrust passively or actively transferred from the teachers to the taught in a field in which controlled experiments are notoriously difficult.

The Present Dangers

However that may be, there is no doubt, I should say, that the present generation does look with rather more favour than the past upon the statistical approach to the problems of medicine, in the curative as well as in the preventive field. A superficial study of medical journals is sufficient to reveal that—in spite of the gloom which much of the flow of literature must continue to inspire in the mind of the statistical enthusiast. While that change is—to the statistician at least—all to the good, it may yet bring, I believe, its own dangers. Such dangers will arise if the writer or the reader does not really understand the basis of the methodology that is being applied. For instance, we may run the risk of passing from the situation in which it is too readily concluded that the reactions of Group A, treated in one way, differ materially from the reactions of Group B, treated in another way, when in fact such a difference might quite easily have arisen merely by chance with the numbers involved, to the other extreme when, overawed by a spate of ± signs and technical tests of significance, it is humbly accepted that it is "mathematically proved" that Group A *does* differ from Group B and that therefore this must be due to the treatment, which as logic is even more indefensible. In other words, the uninstructed or half-instructed may be just as easily misled, perhaps more easily, by an appearance of "mathematical" exactitude as by the simpler and more old-fashioned methods of mishandling figures. If that were to occur, aided in other fields by the readiness with which right- or left-wing enthusiasts will continue, consciously or unconsciously, to find figures to fit their fancies, the pendulum will doubtless swing back and bring to the fore again the belief that statistics in medicine can be made to "prove" anything and are to be eschewed.

If that result is to be avoided, and a valuable method of research is to be given its proper place, the medical worker, and his readers, must be at least on speaking terms with the elements of statistical reasoning and methods of analysis, and thus be able themselves to weigh numerical evidence justly in the balance. In short, I should replace my querying title, "Statistics in the Medical Curriculum?" by "*What* Statistics in the Medical Curriculum?" (though I am well aware that some clinical teachers will prefer to read it as "*What!* Statistics in the Medical Curriculum?").

The Need for Accuracy

To begin with, on the preventive side of medicine I believe that it is very important that the embryo doctor should be made fully aware of the uses to which statistics of mortality and morbidity are continuously put in public health work, epidemiology, and social medicine. He (or she) is not only sometimes, if he chooses, the consumer of those figures but, whether he chooses or not, is invariably their manufacturer. It is upon the original clinical judgment and diagnosis that the whole subsequent edifice must be built, and our attempts to illustrate the national trends of disease and death, and to solve the problems of epidemics and sickness as a community phenomenon, must be materially aided or hindered by the standard of accuracy that is possible at any given time and place. The student should therefore be taught that it is highly important that he give, so far as he can—as Farr wrote quite a long time ago (1839)—"an authentic name of the fatal disease." Such records are not merely ephemeral bits of paper to satisfy legal requirements but are fundamental to the national vital-statistical system and serious contributions to the problems of the preventive field.

Of course there will be difficulties; diagnosis and certification are not easy tasks, and the aids to them and their resulting accuracy must change from time to time. The medical statistician is perfectly aware of that. But if we await perfection we shall wait for ever, and so long as we are not ignorant of the imperfections much can be learnt from these imperfect records of mortality and sickness. The medical student, in my view, should, to encourage his interest in this field, be shown at some point in his clinical studies the main uses to which are put the raw material of which he is the producer and briefly how they are statistically treated—for example, by reference to publications of the Registrar-General. In short, as inevitable producer he should be encouraged to give of his best in this respect in his medical career, and as possible consumer he should be made aware of the limitations of the resulting data and thus be able to take a balanced view of them. It

1 "The Role of Statistics in the Furtherance of Medical Research." *Trans. Faculty of Actuaries*, 1945.
2 "Statistics in Medicine." *Trans. Manchester Statist. Soc.*, 1947.

may be said that without instruction he will automatically acquire this latter characteristic. I do not myself feel so certain. During the course of a single committee meeting I have heard a distinguished surgeon reject as quite valueless the death certificates obtained in a follow-up of patients with cancer and yet express the greatest interest in the cancer mortality data by site of growth published by the Registrar-General. He apparently saw no inconsistency in this attitude towards material obtained from precisely the same sources, and such an attitude is by no means rare.

Although, naturally, I should not subscribe to the view that the statistician is merely one who hopes, by the slow and patient accumulation of errors, finally to arrive at the truth, I should maintain that in spite of recognized individual errors we can from mortality and morbidity data reach at least valuable indications of population characteristics and their changes in space and time. But that, I believe, needs demonstration by simple teaching. For instance, we have the rise in mortality from tuberculosis during years of war. Some part, however, of that change may well be artificial if, as is customary, the death rate be based upon the experience of civilians only. The more physically fit part of, at least, the male population at young adult ages is being continuously withdrawn into the fighting Services, and the civilian death rate is therefore adversely affected merely as a result of the inevitable changes in the "make-up" of the population at risk. On the other hand, we can see that some part of the rise—particularly at ages relatively or entirely unaffected by the call-up—must certainly be real, whether it be the result of overcrowding, new working environments, bad feeding, and so on. Again, in spite of errors of diagnosis in the records of cancer mortality, we can be sure that they will not account for the population characteristics revealed—the increasing rate of mortality as we pass down the social scale, the excessive death rate in occupations closely concerned with alcohol, the geographical differences in mortality of certain sites to be found even within this country.

The medical student, before he completes his course, should also be made familiar with the simpler vital-statistical rates—for example, the neonatal rate, the infant mortality and maternal mortality rates, the crude death rate and its limitations. Those figures, no doubt, lie more in the province of the public health worker, but they are now cheerfully bandied about in the daily press, and a professionally trained man or woman should have a sound knowledge of their derivation and meaning.

A More Fundamental Question

Passing from this specific field of vital statistics, and the general practitioner's contributions to it, a more fundamental question is whether the medical student should in his training be taught the more general aspects of statistical thought and its simpler methodology. In my opening paragraphs I have more than implied that he should, and this is, not unnaturally, the view taken in a report recently issued by the Council of the Royal Statistical Society.[1] Apart from the need for professional statisticians and for schools of pure statistical teaching and research, it is in this report strongly urged that all students in the social and natural sciences should "have some familiarity with statistical ideas and the most common methods, as part of their background knowledge." For every worker who has need to use statistical methods many, it is pointed out, have occasion to appreciate results and arguments having a statistical basis—the medical man, I should add for example, in assessing clinical trials of a method of treatment or tests of preventive inoculation, in assessing the results of a follow-up of patients, and so on. In short, "the statistical approach is so fundamental to the modern way of looking at things—the affairs of everyday life as well as scientific theories and experiments—that it should form part of the mental equipment of the educated man, which it is not at present."

[1] "The Teaching of Statistics in Universities and University Colleges." A report of the Council of the Royal Statistical Society printed in advance of the *Journal* of the Society, 1947, 110. Price 6d.

A Suggested Course of Training

While that outlook may ultimately be realized through the teaching of statistics in schools, at present it falls to the universities to inculcate it. The Council of the Royal Statistical Society is, therefore, led to propose three main types of courses of tuition—namely: (*a*) a short elementary course for at least all students in the social and natural sciences, requiring no special mathematical ability but designed to familiarize students with statistical ideas and the most commonly used elementary methods; (*b*) an ancillary course of a somewhat more advanced type to enable students to utilize properly statistical methods in their chosen science; and (*c*) an advanced course for those of mathematical bent.

To my present thesis the last is clearly irrelevant, but the question of the ancillary course is rather more difficult. The Royal Statistical Society's report argues that it is "desirable that this second type of course should be taken by most students of the social and biological sciences in all universities, as part of the normal curriculum for a first degree. We realize that this may be regarded as a revolutionary proposal, and that there are great practical difficulties in adding further work to existing programmes; but it is impossible to escape the conclusion that the scientific worker in the social and biological fields who has not a sound grasp of the statistical approach and its simpler methods of application is seriously handicapped when appreciating quantitative laws and attempting the interpretation of observational data."

To what extent is that applicable to the doctor in training? For those who intend to embark upon research or take up scientific work of one kind or another such a course is, I believe, most definitely needed. But for the bulk of medical students bent on general or consultant practice I suggest, at present, it would be wiser to restrict ourselves to (*a*), the short elementary course. Some ten lectures (or even fewer) on basic ideas and simple methods of handling and interpreting quantitative data would be sufficient for that purpose, with the addition—and this is fundamental—of some practical arithmetical work. For all teachers of statistics are, I believe, in agreement on at least this one point, that without practical applications by the student the teacher's instruction may be largely wasted. Many of the students would, no doubt, never again apply the methods in their field of work (any more than they personally apply, say, their instruction in bacteriology), but they would at least acquire the necessary background—be grounded in thinking about numerical material, its limitations and its meaning, and thus be less liable to accept at their face value results based upon unwarranted comparisons, upon so-called "controls," or upon a quantitatively exceedingly slender foundation.

The Statistical Method in Practice

They would be taught, I reiterate, to *think* about figures, constructively or destructively as appropriate, about their own and those published or put about by other persons. At present that thought is often entirely lacking or is

misguided through lack of a knowledge of how to set about it or through ignorance of statistical concepts. A few simple examples from "real life" might clarify that assertion. In 1946, for instance, I made for the British Medical Association an inquiry into the pre-war incomes of general practitioners—information which was required for submission to the Spens Committee on levels of remuneration in the new health service. It was impracticable to seek this information from all practitioners, and a sample was taken—how is highly important but not relevant to my present point. Let us suppose that out of a total of 20,000 practitioners 5,000 were picked at random to give a representative cross-section. Of these 5,000, however, only 3,000 respond. In other words, the original sample which the statistician is satisfied will, within limits, give the right answers is replaced by a smaller sample which may not be at all representative of the total population. If those who choose to answer are those earning good incomes the resulting figures are too high; if persons earning a lot are too busy to bother with forms they are too low. The actual motives or habits leading to answering are unknown, and there is no means of determining whether or no they are associated with earning capacity. But, on the other hand, some persons do not see why the numbers should not be made up to the original 5,000 required by taking another sample and adding in their replies—there were plenty of practitioners left who had not been approached. The fundamental statistical requirement of quality as well as quantity is overlooked. No mere increase in numbers can produce the representative cross-section sought if those who are willing to respond are basically not representative themselves. Whatever the size of the sample it remains biased. For very similar reasons the follow-up of patients to determine the upshot of treatment may give an erroneous answer if only a proportion of the original treated group can be traced, say, five years later. The question turns upon whether the lost-sight-of are likely to be different in their state of health from the traced—have they more frequently disappeared through death or, on the other hand, through survival in good health and a consequent movement to a distance? Is the sample that can be found representative of the original group?

In the field of association equally simple, but still overlooked, difficulties arise. For instance, we may note that children who contract a disease after inoculation against it die less frequently than uninoculated patients. We must, however, consider whether the two groups are comparable except with regard to the state of inoculation. The inoculated might be of school age and the uninoculated of preschool age, and we should then expect to see a lower fatality rate in the former compared with the latter, quite apart from inoculation, since the fatality rate normally declines with age. Or we have the uncontrolled observation that patients with a given disease have such-and-such a characteristic or antecedent, and overlook the essential need to know whether they have that characteristic or antecedent any more frequently than happier mortals who do not contract that disease. It all seems distressingly obvious when it is written down; it always does—but the faculty of common sense is not so common. The same mistakes continue to crop up, and the same inefficient numerical treatments continue to be applied to data.

Conclusion

Arithmetic guided by logic has been given as a fairly accurate definition of simple statistical methods, and it is that kind of teaching that would, it is my belief, be of real benefit to the medical student. It should introduce him not only to such general viewpoints as those given above, to be borne in mind in considering statistical evidence, but also teach him the appropriate methods of handling and presenting data, and familiarize him with the statistical concepts of variability, the ideas lying behind elementary tests of significance, simple means of measuring and interpreting associations, and so on. Such teaching would also, I believe, be of undoubted value to the medical practitioner who found at one stage of his career or another that he wanted to set about a piece of original work—and surprisingly many are drawn to it. How should he set about making the appropriate observations? How many will he need? In what form shall the records be made to ensure completeness and to facilitate subsequent analysis? Will it be sufficient to observe the affected individuals, or must the unaffected be equally carefully included in the inquiry? Must the exposed to risk be enumerated? Will such-and-such a method denote an effective experiment and lead to a clear answer? Will a control group be required, and what, if so, is a satisfactory way of obtaining it? Will it be necessary to have full records for all the population under study, or if a sample be sufficient what is the best means of drawing the sample? And so on. The specific questions involved and the answers to them will, of course, vary from inquiry to inquiry. But the basic ideas behind them will be very similar. Some acquaintance with those ideas will certainly help to make less frequent, at the end of perhaps months of patient work, that unhappiest of statements beginning, "If only I had realized I should need . . ." How often at present does the statistical consultant have to echo sadly, "If only!"

THE FUTURE OF PUBLIC HEALTH EDUCATION

BY

J. M. MACKINTOSH, M.D., F.R.C.P., D.P.H.

Professor of Public Health in the University of London

When a medical student graduates he generally seeks further hospital experience in the first instance, so that he may practise under the canopy of skilled supervision. After that he ought to spend at least a year as an assistant in general practice; and military service should not tempt him to cut down this period of valuable training in the field, whether he intends to specialize or not. The majority of young medical men and women are well content, when this preparatory phase is over, to build up their life-work in general practice—the most strenuous and the most satisfying of all medical careers. Some of the others will turn to the special branches of medicine, probably because one of these has already stirred their imagination.

The prospect of a career in the public health service does not illuminate the mind with great intensity; but it is a steady light to many who see in it an opportunity for promoting social welfare. There are medical men and women to-day who discover that their interests move towards health rather than sickness; others find that their talents lie in administration; and others, again, believe that a general background of training in preventive and social medicine is a good foundation for practice in certain branches of the national medical service—such as paediatrics, industrial medicine, infectious disease, or bacteriology.

One of the objects of the postgraduate course of education in public health is to lay good foundations for careers in preventive medicine. The course as it stands to-day is

not narrowly vocational, but its content must inevitably change with the changing functions of the medical officer of health. Its first aim is to make good medical officers of health, and I hope that the diploma course will always be flexible, and sensitive to such changes.

Changing Functions of the M.O.H.

In the latter half of the 19th century the work of the M.O.H. was almost entirely environmental, and he was expected to be Jack-of-all-trades—sanitarian, epidemiologist, bacteriologist, and even public analyst. An interesting account of the work of the first medical officer of health has recently been published in Prof. Frazer's monograph on W. H. Duncan, of Liverpool.[1] The first quarter of the 20th century brought the M.O.H. into touch with an increasing number of problems relating to personal health through the maternity, infant welfare, and school health services; and into immediate contact with sickness through schemes for tuberculosis and venereal disease and other conditions in which the social factor was of notable concern. The transfer of Poor Law hospitals from the Guardians to the County and County Borough Councils still further plunged the health officer into clinical responsibilities. At the same time the constant increase in his administrative functions led the M.O.H. daily further away from the practice of medicine, and the complex arrangements for civil defence during the recent war taxed his administrative powers to the full. The medical officers of health accepted these changes as they came and built their new duties into the structure of a health service for the people. In a recent address the Minister of Health paid a just tribute to their constructive work in a century of public service:

> "The medical officers of health," he said, "spent their early years in dealing with epidemics and environmental conditions leading to disease, and later they branched out, with very much more success than is generally admitted, into the clinical fields. Although very many claims—and justifiable claims—are made for the voluntary-hospital system, it must never be forgotten that the medical officers of health *inherited* the Poor Law system, and that they had to try and adapt the ugly infirmaries of the past to modern hospital requirements. And whenever people are inclined to make odious comparisons between the standard of some of the voluntary hospitals with the municipal hospitals, they should remember that the medical officers of health had the past to live down and had very adverse circumstances to overcome. In the hospital field they have indeed won very great distinction."

Now we are on the eve of a revolution in the organization of the national medical services. So far as the health officer is concerned a painful operation (as the Minister described it) is about to be performed: the municipal hospitals and practically the whole of the public clinical services which he has done so much to build up are being taken from the local authorities and organized into a national scheme. Where do we go from here?

The established medical officers of health, and particularly the elder brethren, may say with stoic resolution:

> "Though much is taken, much abides."

But this is cold comfort for the young who are on the point of choosing a career. There are thus two matters for our special consideration: the present value of a postgraduate education in public health, and the prospects of a full and satisfying life for those who take up preventive medicine as a career.

The earlier medical officers of health had to be expert in sanitary science. Applied chemistry and the primitive but rapidly growing science of bacteriology were within the sphere of their routine duties, and postgraduate courses of instruction in public health very properly offered laboratory study in these subjects. Before long, however, the immense broadening of these fertile acres led to specialization, and the practising health officer had to leave laboratory work to the expert. His own interest turned more and more to the pressing questions of personal health as successive Governments placed on local authorities one responsibility after another in the range of social medicine. Instruction in the social aspects of disease and in the administration of the personal health services was gradually added to the curriculum (often, it must be confessed, long after the need had arisen), but the diploma course remained essentially unaltered, founded deep on the nether springs of science and built to a Victorian model. The transfer of hospitals in 1929 had little immediate effect on public health teaching, and, indeed, no important change took place until the war of 1939–45, when plans for a national medical service began to be laid in an atmosphere of evanescent idealism. At the same time clinicians rediscovered the principles of what good medical officers of health had been practising for two generations—the application of medicine to man in his environment—and gave it the useful descriptive title of "social medicine." In this way the medical profession brought the social aspects of medicine into the foreground, and physicians have made an important contribution to the advancement of public health

New Curriculum for D.P.H.

The new curriculum for the Diploma in Public Health, which was approved by the General Medical Council at the end of the war, has now been in operation for two years. The course covers one academic year of full-time study (and provision is made for an equivalent period of part-time study). The first three months of the period consists of a preliminary course for a "Certificate in Public Health," dealing mainly with subjects which ought to be taught in the undergraduate curriculum as the basis of preventive and social medicine. It covers the historical approach to public health and the care of the poor, and leads naturally to a general study of central and local government as they stand to-day, including the services for health and social security. On this broad basis the student is encouraged to build up a conception of the functions of the medical officer of health—statistical, epidemiological, and environmental. Practical demonstrations in class and visits to places and institutions are arranged to illustrate the subject-matter of didactic lectures.

At the end of the first three months a Certificate in Public Health is granted to those who pass an examination. This preliminary course, it is hoped, will be a useful preparation for those who intend to follow any branch of preventive and social medicine, such as paediatrics, mental health, infectious diseases, and the school medical service.

The final course, covering a period of six months after the certificate has been obtained, is intended primarily for men and women who wish to become health officers. The curriculum changes its emphasis with the varying needs of the service, but has two broad divisions into (*a*) basic subjects, and (*b*) elective subjects. Every student is required to take a full course of six months' study in the basic subjects, but is allowed—within well-defined limits—to follow his bent in the elective subjects. The essential subjects are as follows: (1) epidemiology; (2) medical statistics; (3) physiology (including nutrition) applied to health; (4) public health law, administration, and practice. The elective subjects include these groups: (1) administrative; (2) occupational; (3) statistical; (4) tropical (comprising medical entomology, parasitology, and tropical hygiene). These

[1] *Duncan of Liverpool*, by W. M. Frazer. Hamish Hamilton, 1947.

groupings are illustrative only, and have not yet been developed in detail; but they represent a tendency towards freedom of choice, provided that the student can reasonably apply himself without diffusion of effort.

Two other features of the D.P.H. course stand out prominently: the day-book and the dissertation. Every student is required to keep a day-book in which he enters his observations during field visits, his notes on current public health activities as represented in both medical and lay press, and a précis of any special studies that he wishes to follow during the course. The dissertation, on the other hand, is intended to stimulate private reading, in the school library or elsewhere. The student has an almost unlimited choice of subject, and an opportunity to show his industry in the day-book and his imagination in the dissertation.

Careers Open to Students

We have seen that the course of study for the Diploma in Public Health has claims to survive in its own right, irrespective of the vocations which its students may follow. We are concerned, however, with the careers which are likely to be open to students; these must be considered in turn.

1. The Office of Medical Officer of Health

The withdrawal of hospital administration, and of clinical and associated organizing functions in connexion with tuberculosis, venereal disease, and other "community" diseases, from the sphere of the M.O.H., and the redistribution of the clinical side of maternity and child care, undoubtedly take away from the M.O.H. many of his most interesting duties. In commenting on this the Minister of Health (in the speech already referred to) said:

> "I do not think that the medical officers of health have any reason to believe that their functions in the future are going to be less important than they were in the past. On the contrary, the medical officers of health are going to be very important links between the Regional Boards, between the health committees and the local medical committees and the Executive Councils responsible for the general public service—a very important link indeed."

This statement refers merely to co-ordinating functions which the M.O.H. will take in his stride, but it emphasizes the need for offering more instruction in medical administration. The Minister went on to deal with another aspect of the new health service:

> "It has been pointed out," he said, "that on paper it looks as though the health service had some very serious crevasses. . . . Well, the medical officers of health are going to be the bridges that will carry you over from one side of the precipice to the other, and that locally and functionally they will be able to bring about the unification in practice of a scheme which superficially looks divided, and I would much rather have unity in practice and superficial schism than superficial unity and muddle in practice. And therefore I am confident that the medical officers of health are not at the end of an epoch, but at the beginning; that they are not at the beginning of an epoch of declining usefulness, but, on the contrary, I believe that their value is going to expand, and their importance is going to grow, and that they are going to achieve new distinction."

These are heartening words to perplexed medical officers. They refer, however, almost entirely to further administrative duties, and as such they will be loyally undertaken by medical men and women whose talents and interests are primarily administrative. It should be noted in passing that some people argue that administrative work is a waste of medical training. There is no substance in this argument. No single road leads to a career in administration; some enter this field through law, others through a basic education in classics and philosophy, and others, again, through business training. The medical man who finds, after graduation, that his talents lie in administration is entitled to pursue the career of his choice, and he brings many real advantages to his service as a medical administrator. Nevertheless, there are many medical men and women in the public health service to-day who have a deep interest in personal health, in social betterment, and in the association between individual health and the health problems of the community as a whole. Must we assume from Mr. Bevan's address that the Government cupboard is bare, so far as these items are concerned? I do not think so. The Minister was referring only to the effects of the new Act, of the changing order, on health officers. There is another side to the whole matter which the Minister had no special cause to examine. The addition of clinical and quasi-clinical duties, including the hospital services, to the medical officer of health was not part of a well-designed policy; it was a course of expediency, because the M.O.H. happened to be the only person at hand sufficiently trained in administrative medicine to accept these burdens. *They are not, and never were, the proper duties of a medical officer of health.* The fact that he undertook them willingly, and carried them out with distinction, is quite beside the point. They are now in good shape, and the M.O.H. should be content to hand them over to the "clinical" authorities, especially as they have discovered the supreme importance of the social aspects of medicine. The hospital authorities were never more fitted than they are to-day to receive the "trust" of social medicine, and the medical officers of health have no reason to be ashamed of their period of trusteeship.

What work of noble note remains for the M.O.H. of the future? The answer is simple and urgent. He will be able to get back to his own job, in which there are vast, ill-explored territories for development. I do not hesitate to say that epidemiology and statistics are crying out to be yoked together in nation-wide investigations; that the study of the causes of sickness needs the co-operation of a whole army of health officers; and that the early ascertainment of sickness deserves immediate and intensive study. To take a single illustration: we do not know nearly enough about the earliest signs of such conditions as cerebral palsy, or acute rheumatism, or poliomyelitis (to take a few diverse conditions at random). Secondly—and a matter of even greater importance—we do not make enough effort to assess the signs and symptoms of health. The result is that we have little understanding of how to promote health, and most of our education and propaganda to-day is feeble and ill-informed. It may seem a startling statement to make, but one of the jobs of a medical officer of health is to promote health. He has hitherto been far too much concerned with sickness. I do not blame the M.O.H., because the task of health education is colossal. Government (as witness the so-called National Health Service Act), local authorities (as witness their immense pride in elaborate hospitals), the medical profession (whose financial interest is biased in favour of sickness), and the undiscerning multitude (who spend their time swallowing gaily advertised or threatening medicines) are all interested in sickness, not health. So the annual report of the average medical officer of health is one of the dullest and most uninspiring documents in the world of medicine.

We must not forget housing, which is perhaps the most urgent health project of this age. Here I can say with the intense conviction of personal experience that housing is the most fascinating, the most hopeful, and one of the most neglected functions of the M.O.H. I do not mean its negative aspects—the eradication of defects—which have always been done with skill and persistence even under the shell-fire of gross unpopularity. I mean the positive side, the joy of planning

2. Other Careers in Medical Administration

The course of study for the D.P.H. is intended to be educational in a broad sense. It serves as a gateway to appointments in Central Government departments and in other public organizations which combine medical and administrative functions. The medical staffs of the Ministries of Education, Health and National Insurance are good illustrations, and it is noteworthy that recent senior appointments have been filled by experienced medical officers of health. Indeed, the great majority of medical posts in Central Government departments are filled by persons who hold the D.P.H., and many of them have had practical experience in local government. This is as it should be, for the diploma course pays special attention to the relationship between central and local government.

Outside the Government services there are many responsible posts for which an understanding of medical administration is a qualification. Voluntary associations, organizations for research, and some of the new regional authorities may well regard training in the principles of preventive and social medicine as a valuable asset in a candidate. The undergraduate medical course is a good foundation, too, for a career of this kind, because it lays great stress on human relationship. In the United States it is possible to take up a career in public health without a medical qualification, but those who do so regret, as a rule, that they had not first graduated in medicine.

3. Industrial Health

Most of the appointments made hitherto in the industrial field have been mainly clinical, and a fine service of industrial medical officers is developing in this country. In recent years a diploma has been established by various medical authorities to meet the needs of these officers. This diploma is called the Diploma in Industrial Health in conformity with the misuse of the word "health" now so widely current in official documents and even in Acts of Parliament. Side by side with this important advance in medicine there are signs of a thrust forward towards an industrial health service. Further legislation will be necessary to secure this, but one may prophesy with confidence that within the next decade there will be a steady demand on the part of local authorities and large industries for supervising medical officers whose training and outlook are based on public health.

4. Tropical Hygiene

A similar tendency may be detected in the Colonial medical services. Until recently all the bias in training has leaned towards the practice of medicine in the Tropics. The new line of advance has as its object the improvement in the health of the general population of the Tropics.

In European countries much was known of the life-history of the peoples before the rise of modern medicine. In the Tropics, on the other hand, clinical treatment was applied in the absence of reliable vital statistics; the birth and death rates, let alone the more subtle indices of social and physical health, are little more than guesswork. The health of the Tropics has been studied by groping in the dark. The opportunities for men and women educated in preventive medicine are therefore almost unlimited.

5. Investigation and Research

If we confine the term "research" to the direct studies of Nature undertaken by the physical sciences we are left with a vast territory—only partly explored—in which investigations in preventive and social medicine can be carried out. In the postgraduate course for the D.P.H. the nature and scope of these investigations are plotted out, and the students have the advantage of co-operation in teaching between a number of university departments, especially in sociology. Recent investigations carried out in the field of public health by physicians, health officers, and students of social science—to mention only three companies out of a large army—have demonstrated clearly that there is space for new workers with fresh minds.

These are a few of the ways that lie open to the student who enters the health service. The future lies with the team of workers who can bring to the common store treasures of varied experience . . . "not forsaking the assembling of ourselves together, as the manner of some is."

Announcing that the part-time nursing campaigns are now meeting with widespread success, a circular from the Ministry of Health to local authorities points out that certain difficulties have arisen over classification and rates of pay. It suggests that 1s. 9d. per hour might be appropriate for those volunteers who have had nursing training or experience in the past, but who, through retirement from the profession on marriage, or for other reasons, had not applied within statutory time limits for State registration, admission to the list of nurses under Section 18 of the Nurses Act, 1943, or for State enrolment. A higher rate, perhaps 2s. per hour, might be suitable for a woman holding a certificate of three years' nursing training issued by a hospital before July, 1925.

Medical Memoranda

Acute Haemolytic Anaemia (Lederer type)

Lederer in 1925 reported three cases of acute haemolytic anaemia "probably of infectious origin." The onset was characterized by rapid development of pallor, icterus, weakness, rise of temperature, and evidence of haemolysis. The blood picture was dominated by a very profound, rapidly progressive anaemia, with marked leucocytosis and erythroblastaemia. A striking feature was the dramatic response to blood transfusion, with prompt cessation of haemolysis and complete recovery. According to Giordano and Blum (1937) about fifty reports of this type of anaemia have since appeared. The following report is based on a case of this kind of anaemia.

Case Report

A tailor aged 22 was in good health until a few days before the present illness, when he had progressive fatigue, headaches, and shortness of breath. On April 2, 1946, he suddenly became ill with chill, fever, some vomiting, and marked pallor. The urine was dark reddish-brown and the temperature 102.2° F. (39° C.). He was admitted to hospital with a temperature of 103.1° F. (39.5° C.). He appeared to be seriously ill and had a very anxious expression. The skin was pale, moist, and icteric. Physical examination was essentially negative: we found only a splenic enlargement. A blood count on April 6 showed: Haemoglobin, 30%; red cells, 1,500,000 (normoblasts 13%, reticulocytes 32%); colour index, 1; white cells, 55,000 (myelocytes 2%; metamyelocytes, 5%; rod forms, 6%; neutrophils, 60%; lymphocytes, 27%); fragility of erythrocytes, normal; van den Bergh, indirect, positive; urobilin, ++. The urine was highly coloured and contained traces of haemoglobin and albumin. The blood culture was sterile. On April 10 a blood count showed: haemoglobin, 30%; red cells, 1,800,000; colour index, 0.8; white cells, 40,000 (myelocytes, 3%; metamyelocytes, 6%; rod forms, 5%; neutrophils, 68%; lymphocytes, 18%); normoblasts, 13%; van den Bergh reaction indirect positive; urobilin ++. Injections of liver extract were given, but there was no real improvement. On April 12 he was transfused with 150 ml. of blood. The treatment was followed by an immediate improvement. The temperature fell to normal. On April 15 a blood count showed: Haemoglobin, 88%; red cells, 4,100,000; colour index, 1; white cells, 10,250 (rod forms 3%, neutrophils 59%, lymphocytes 38%); urobilin, *nil*. The patient left hospital on April 24. He has remained in good health, and a blood count on May 12 showed: haemoglobin, 86%; red cells, 4,300,000; colour index, 1; white cells, 8,000, with no appreciable change in the differential count.

Comment

Lederer's anaemia may occur at any age. The onset is sudden, without any previous history of anaemia or jaundice. The patient presents a picture of acute and critical illness with approaching coma. Physical examination usually reveals splenic enlargement. The blood picture is characterized by a rapid drop of erythrocytes and haemoglobin and the appearance of immature and reticulated red blood cells. The presence of megaloblasts in the circulating blood is emphasized by Lederer (1930). O'Donoghue and Witts (1932) denied the occurrence of megaloblasts in Lederer's anaemia. In my case megaloblasts were not found in the peripheral blood or in the bone marrow. The anaemia is usually associated with marked leucocytosis, often with a leukaemoid reaction. A further dominant feature of this form of disease is the excessive destruction of the red blood corpuscles. The most important evidences of haemolysis are the hyperbilirubinaemia, the increased excretion of urobilin and the haemoglobinaemia. The differential diagnosis includes acute leukaemia, erythroblastic anaemia, and blackwater fever. The preferred treatment is blood transfusion. Nothing was known about the pathogenesis of the disease. The infectious origin is very suggestive, but all attempts to cultivate a micro-organism have completely failed.

Department of Medicine, University of Athens School of Medicine. G. PAPAYANNOPOULOS, M.D.

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Reviews

CUSHNY'S PHARMACOLOGY

Pharmacology and Therapeutics. By Arthur Grollmann, Ph.D., M.D., F.A.C.P., and Donald Slaughter, B.S., M.D. Originally written by Arthur R. Cushny, M.D., F.R.S. Thirteenth edition, thoroughly revised. (Pp. 868; 74 engravings. 45s.) London: J. and A. Churchill. 1947.

It is sad to note that this well-known textbook of pharmacology has now become wholly American in authorship. After Cushny's death Prof. Edmunds, of the University of Michigan, and Prof. Gunn, of Oxford, wrote four editions, so that the book remained at least half British; but now Prof. Grollmann and Dean Slaughter have made it an entirely American product. The change can readily be understood when they say they have prepared it as a textbook for the student and practitioner of medicine rather than as a compendium of pharmacological knowledge. Very few British students would buy this as a textbook: they would prefer something much smaller; and if the sale of the book is expected to be mainly in America it is natural to choose American authors. We notice with interest that the senior author is both professor of pharmacology in the South-Western Medical College, at Dallas, Texas, and professor of medicine and chairman of the department of experimental medicine. There are few men who are both professors of pharmacology and of medicine. It is appointments of this kind, linking the preclinical and clinical departments, that have promoted the vigorous growth of experimental medicine and clinical research in America.

The new edition is a good one. Medical research moves fast in these days, and much new material needed incorporation in the book. The authors have achieved this without increasing its size, and they are to be congratulated on its presentation. Prof. Grollmann, who is well known in this country, has prepared most of the book; it was to be expected that he should prove a careful and successful guide. There are good accounts of penicillin, streptomycin, and other antibiotics, of the antihistamine drugs, and of the use of BAL, to mention only some of the recent additions to therapeutics. We notice, however, that the authors record only the American antihistamine drugs and not the still earlier and more powerful French one. Similarly, although they clearly indicate the British origin of BAL, the only reference is to a paper by American authors. Cushny's textbook was always useful for the number of old and interesting references it contained; very many of these have been replaced by new American ones. It is true that the development of American medicine justifies this course, but we doubt whether it was wise to omit so many earlier references, particularly those to German work. We can confidently recommend this book to the practitioner of medicine.

J. H. BURN.

GUIDE TO MINOR SURGERY

Minor Surgery (Heath: Pollard: Davies: Williams) for the Use of House Surgeons, Dressers, and Junior Practitioners. By Cecil Flemming, M.Ch., F.R.C.S. Twenty-third Edition. With a Chapter on the Administration of Anaesthetics by H. N. Webber, B.Ch., D.A. (Pp. 406; 209 illustrations. 14s.) London: J. and A. Churchill. 1946.

Books have their personality and limited life: very few reach a twenty-third edition and the age of 86 years. When at the youthful age of 26 and only a year after taking his F.R.C.S. Christopher Heath published his book on minor surgery and bandaging he could hardly have anticipated that it would live so long. Such an achievement shows that the successive editors—Bilton Pollard, Morriston Davies, Gwynne Williams, and now Cecil Flemming—have shown great judgment in the difficult art of rejuvenation. The present edition will be a useful guide to the young house-surgeon and practitioner.

In some parts there has been undue hesitation in making changes that are well warranted by recent advances in our knowledge. Carbolic lotion is still recommended for compresses and for washing the patient's skin (p. 13). Though the value of penicillin is affirmed the dosage recommended is rather too small (p. 70), and it is assigned a secondary (instead of a primary) place in the treatment of boils, carbuncles, and other septic infections (p. 203). In the treatment of a slowly healing chronic infected wound we are advised to change the nature of the wet dressing every few days, "for a strain of organisms resistant to one may succumb to another" (p. 67); surely it is better to culture the organisms and apply the appropriate remedy. Some of the illustrations are not very clear. Many genito-urinary surgeons would be displeased with their house-surgeon if he placed the patient on the table for a renal operation in the position shown in Fig. 5, and Fig. 87 seems to indicate that two persons are required to elicit translucency in a hydrocele. In the examination of acute abdominal conditions the advice is given to examine the urine for blood and pus; albumin, of vital significance, might be present without either blood or pus. The index, though printed in clear type, is not full enough. These are minor defects, and we can recommend this book to the student.

V. ZACHARY COPE.

RHESUS FACTOR

The Rhesus Factor. By G. Fulton Roberts, M.B. (Pp. 46. 3s. 6d.) London: William Heinemann Medical Books, Ltd. 1947.

Dr. Fulton Roberts gives a reasonably comprehensive yet readable account of the Rh blood groups and their clinical effects. For the non-specialist the original literature on the rhesus factor is too massive, and, owing to changes in notation made necessary by expanding knowledge, too confusing. This book must be just what many people have been wanting.

Books on the rhesus factor have appeared in Sweden, France, Switzerland, Holland, Italy, and Czechoslovakia. This is the first to be published in England. Even in the short time since it was written certain advances have been made—for example, the tube agglutination method can no longer be considered a satisfactory direct compatibility test. The slide test of Diamond and Abelson, which detects "incomplete" or "hyperimmune" antibody, is the safer. Harvard workers have demonstrated that just over 50% of Rh-negative persons transfused with Rh-positive blood become immunized. The Rh grouping of all women, before or during the child-bearing period, who are to be transfused is therefore an absolute necessity, and should not be considered by anyone as a counsel of perfection, as the author of this book fears it may be.

R. R. RACE.

REFRESHER IN OBSTETRICS

Management in Obstetric Complications. Edited by Clifford B. Lull, M.D. (Pp. 235; illustrated. 24s.) Philadelphia and London: J. B. Lippincott Company.

This small collection of papers on leading topics in obstetrics was compiled for the benefit of American doctors who were obliged by the exigencies of the war to take up obstetric practice temporarily. Some of the papers are of excellent quality.

Bernstine's section on infection of the vagina during pregnancy is a contribution of great merit, well worth careful study by all who practise obstetrics. Indeed, it is doubtful if there is a better concise description in the English and American literature. Galloway's article on puerperal infection follows the usual lines, but it is unlikely that the average doctor, thrust suddenly into midwifery, would obtain much practical help from it. His tribute to the work of Charles White and Robert Collins is graceful and well deserved; he, like the reviewer, regards Robert Collins as one of the greatest of all obstetricians. Greenhill's article on surgical complications is written in his usual style, and displays evidence of great intellectual ability, yet with a tendency to crudeness of expression. Findley's article on third-stage complications is well chosen and well written, and it is the first time we have heard it said of Credé's method of expression that "the placenta is expelled like 'pitting a cherry.'" Kellogg's article on the toxaemias of pregnancy was undoubtedly the most difficult to write; in many ways it is unsatisfactory, and it is doubtful if the average general practitioner would glean much information useful to him in practice. On the other hand, by the incorporation of Hertig's work on the pathology of the pregnancy toxaemias he has produced an article which advanced students in this country

should study carefully. The book is interesting, for it is quite different in style and contents from what would have been published in this country in similar circumstances.

WILFRED SHAW.

ANAESTHETICS MANUAL

A Synopsis of Anaesthesia. By J. Alfred Lee, M.R.C.S., D.A. (Pp. 254; 42 illustrations. 12s. 6d.) Bristol: John Wright and Sons. 1947.

This latest addition to the well-known "synopsis" series is one of the best. As the author says in the preface, it is in no sense a textbook, and he does not give details of technique or references to original papers, but those who already have a sound groundwork of knowledge will find it invaluable for revision and for examination purposes. Few medical books compress so much information into so little space: every aspect of general and local anaesthesia is covered. The material, necessarily factual rather than critical, is in accordance with current teaching. As would be expected from one who has specialized in spinal analgesia, the chapter on that subject is very good, and in contrast to many writers on this controversial topic the author is moderate and unbiased when discussing many "specimen techniques." It is refreshing to see it stressed that Guedel's planes of narcosis were worked out for, and only apply to, open ether, for there is a tendency nowadays to try to use these signs in every variety of inhalation anaesthesia.

The book is exceptionally well produced and effectively printed. Glossy paper is used for some of the illustrations, but the clarity of others is somewhat impaired. Errors are conspicuous by their absence. Within its limited scope this book could hardly be improved.

C. LANGTON HEWER.

AFTER OPERATION

After-Treatment. A Guide to General Practitioners, House Officers, Ward Sisters and Dressers in the Care of Patients after Operation. By H. J. B. Atkins, D.M., M.Ch., F.R.C.S. Third edition. (Pp. 328; illustrated. 18s.) Oxford: Blackwell Scientific Publications. 1946.

The third edition of this book brings it up to date by including articles on penicillin therapy and gastric suction. We may say of this edition, as of the first, that it gives an excellent account of the recognized methods used in the after-care of surgical cases. That it meets a real demand for a concise account of post-operative management is indicated by its having reached a third edition in the five years since its first publication. Although illustrations are plentiful, we should like to see still more; the Miller Abbot tube might well be illustrated both before use and in position in the lower reaches of the intestine as shown in a skiagram.

The statement (p. 169) that a man of "prostatic age" is unlikely to undergo an operation for the repair of hernia is somewhat reminiscent of surgery of earlier times, particularly in view of a recent and celebrated exception. The author does not discuss blood and plasma transfusions in detail, though in defending the omission he indicates the difficulty of selecting material for a book such as this. He is to be congratulated both on his endeavour to solve this problem and on keeping the text abreast of the times. He refers to a destructive criticism of Fowler's position written in May, 1946, and comments that a final assessment of its value must await further observation. The book should continue to appeal particularly to practitioners, house officers, and nurses whose duty it is to see the patient through that period, which is often a critical one, when the operation has been completed and the surgeon has departed.

LAMBERT ROGERS.

Studies on the Influenza A-epidemic of January–March, 1941, at Groningen, Holland, by J. A. R. van Bruggen, M.D., L. Bijlmer, M.D., W. A. Hoek, J. Mulder, and L. J. Zielstra (Leiden: H. E. Stenfert Kroese's Uitgevers-Maatschappij N.V.; 10s.), is a clinical and laboratory study of 44 cases of influenza which was published as a thesis of the senior author. Though carefully done it contains nothing new and suffers from the defect that, at the time of the study, the Hirst test and the modern methods of isolating influenza viruses in eggs were not known in Holland.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

Food Poisoning. By Elliot B. Dewberry, F.R.San.I. 2nd ed. (Pp. 246. 17s. 6d.) London: Leonard Hill, Limited. 1947.

A general account of food poisoning by micro-organisms, poisonous fungi, and metals.

Joseph Lister. By Rhoda Truax. (Pp. 270. 10s. 6d.) London: George G. Harrap. 1947.

A biography of the famous surgeon.

Diseases of the Nervous System. By W. Russell Brain, D.M., F.R.C.P. 3rd ed. (Pp. 987. 37s. 6d.) London: Geoffrey Cumberlege. Oxford University Press. 1947.

This edition includes new material on deficiency diseases, the "costoclavicular syndrome," and "disorders of the body image."

The Doctor and the Difficult Adult. By William Moodie, M.D., F.R.C.P., D.P.M. (Pp. 296. 15s.) London: Cassell and Co. 1947.

An introductory book for the general practitioner on disorders of the personality.

Importancia Biologica del Potasio. By Dr. Vicente Hector Cicardo. (Pp. 254. No price.) Buenos Aires: "El Ateneo." 1947.

A monograph on potassium in the animal and man.

Tercer Congreso Interamericano de Cirugia. Vol. I. (Pp. 527. No price.) Montevideo: 1946.

Includes papers on the biliary apparatus and the pelvis.

Medical Research. Edited by Austin Smith, M.D. (Pp. 169. 25s.) London: J. B. Lippincott Company. 1946.

A symposium on the requirements of medical research, with sections on the laboratory, medical schools, and clinical research.

Blood Pressure and its Disorders including Angina Pectoris. By John Plesch, M.D. (Budapest). 2nd ed. (Pp. 307. 21s.) London: Baillière, Tindall and Cox. 1947.

Case histories and references have been added to this edition.

The Years After 50. By Wingate M. Johnson, M.D. (Pp. 153. $2.00.) London: McGraw-Hill Book Company. 1947.

Intended to help the intelligent layman approaching or past middle age to live a full life.

Advances in Pediatrics. Edited by S. Z. Levine *et al.* Vol. II. (Pp. 409. 40s. 6d.) London: Interscience Publishers. 1947.

Includes contributions on infectious lymphocytosis, fluorine and dental caries, atypical pneumonia, virus diarrhoea, and prematurity.

Advances in Internal Medicine. Edited by William Dock, M.D., *et al.* Vol. II. (Pp. 642. 57s.) London: Interscience Publishers. 1947.

Topics discussed include angiocardiography and angiography, surgery of hypertension, insecticides, penicillin in subacute bacterial endocarditis, and the rhesus factor.

A Handbook for Nursery Nurses. By A. B. Meering, S.R.N. (Pp. 509. 17s. 6d.) London: Baillière, Tindall and Cox. 1947.

Designed as a textbook to cover the syllabus of the certificate of the National Nursery Examination Board.

Gynecology, Including Female Urology. By Lawrence R. Wharton, Ph.B., M.D. 2nd ed. (Pp. 1,027. 50s.) London: W. B. Saunders Company. 1947.

This edition includes new material on embryology, congenital malformations, water cystoscopy, and the technique of ureterotomy for ureteral stone.

Health Facts for College Students. By Maude Lee Etheredge, M.D., D.P.H. 5th ed. (Pp. 439. 12s. 6d.) Philadelphia and London: W. B. Saunders Company. 1947.

An outline of anatomy, physiology, hygiene, and aids to health for the instruction of adolescents.

Pasteurisation. By Harry Hill, F.R.San.I., A.M.I.S.F., F.S.I.A. 2nd ed. (Pp. 296. 21s.) London: H. K. Lewis. 1947.

An account of the heat treatment of milk, including the H.T.S.T. process.

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THE MAKING OF THE MEDICAL PRACTITIONER

Medical education has always been the subject of debate. With every new generation of students some revision seems necessary. Complaints of the curriculum, that it was insufficient, or overloaded, or unbalanced, have continually been made. Just a hundred years ago V. A. Huber, a professor of Marburg, who wrote two now dusty volumes on the English universities, declared that it was as little possible then, in the eighteen-forties, as it had been in the previous century to think of becoming a physician by the help of the courses of public instruction at Oxford and Cambridge. Such knowledge as the medical profession acquired, he said (and he extended his remark to cover other professions, including the law), was gained otherwise than in university courses: it was gained by "practice in life"—whatever he may have meant by that—and by private study and instruction. A hundred years hence our descendants will be dealing with another Goodenough, while the General Medical Council, by then perhaps two or three times reconstituted, will still be considering how best to discharge its fundamental duty of ensuring that no one is turned loose into practice insufficiently equipped.

Periodical reshaping of the curriculum is inevitable, medicine being the living subject that it is. All the recent inquiries into the better planning of medical studies, beginning with the bold and imaginative Royal College of Physicians report, followed almost immediately by the much-discussed report of the Interdepartmental (Goodenough) Committee, and, after an interval, by the well-considered recommendations of the General Medical Council—all of them are so many endeavours, not to make some necessary repairs in a structure designed for permanence, but to readjust what the student must learn in the light of advancing knowledge and the exigencies of public requirement, while at the same time maintaining the essential principle of education, which, as Karl Pearson said, is an appreciation of method, not a mere knowledge of facts. Unfortunately the report of the Medical Curriculum Committee of the British Medical Association is not yet to hand, but when it is published it will undoubtedly prove to be a most valuable contribution to the subject.

The vigilance of the General Medical Council in this matter is largely the subject of Sir Herbert Eason's article elsewhere in this issue. The article, if it is carefully read, should dispel some of the ignorance concerning the Council—an ignorance which appertains to its educational as much as to its disciplinary function. Both on its educational and its disciplinary side the role of the Council is not to protect and defend the medical profession: it is to protect and defend the public. Some better name ought to be coined for this body than one which is likely to confuse it in some minds with an association of doctors for their mutual advantage. If it could be spoken of under its complete title, the General Council of Medical Education and Registration, mouthful as it is, misconceptions would be less likely to arise. It is true that it is a body composed, except for one member out of about forty, of medical men, but the great majority of its members are not chosen because they represent the universities and medical corporations which grant qualifications. There is a handful of direct representatives, one to about every ten thousand people on the *Register*, chosen by popular election; but highly desirable as it is to have them, and outstanding as has been the contribution which some of them have made to the Council's work, they are really an intrusion, a small infiltration into the original academic pattern. For some years there has been one lay seat on the Council, always filled by a man eminent in public affairs, but never by one conspicuously associated with education or, for that matter, with jurisprudence. Seeing that the Council has to take into consideration not only the training of the medical student but his basic education in the secondary and public schools, the opportunity might have been seized of making one at least of the five Crown nominees a person distinguished in the educational world. It can never be said that the Council has failed to discharge its functions in education; it has discharged them with great thoroughness within the limits of now rather ancient legislation; but someone whose field was general education might have assisted the Council to take a broader view, just as the Council might have profited on its disciplinary side from the presence of a jurist. Another, perhaps at present too revolutionary, suggestion would be to have on the Council one or more representatives of the students, to represent the consumer.

The exercise of oversight by the General Medical Council is made difficult by the limitations under which it works. The Council can appoint inspectors to attend the qualifying examinations, but it has no inspectorial rights concerning the courses of study, the arrangements, the staffing, the accommodation at the various colleges and schools. It is assumed that the sufficiency of the curriculum depends not less—perhaps more—upon the answer to the question whether the courses of study are sufficient than upon the examinations. Both together furnish the guarantee of professional competence. Yet the Council has got the tools for only half the job, and, as Sir Herbert Eason hints, perhaps the less important half. The Goodenough Committee urged, and the Council itself endorses the view, that the Council should have the power to visit the schools as it has had the power for ninety years to visit the examinations. Not that there is any intention to bring about a dead level of uniformity. The schools would be left, as they have always been, to develop their own character and individuality in the sound British way. What the Council is out to do is to ensure a minimum standard of sufficiency. The influence of the Council is most effectively exercised through what are called "recommendations," but the word must not be regarded as meaning benevolent advice to be taken or not by the intended recipient as he pleases. The recommendations are themselves the result of a long back-and-forth procedure between the bodies and schools and the Council, and there is ample opportunity for observations by all concerned before they take a crystallized form. One of the current suggestions is that not only should each medical

school keep its own curriculum continually under review, but that the Council itself should undertake a reconsideration of the curriculum periodically, say every five years.

Such reconsiderations of the curriculum are not merely a matter of introducing new subjects about which it is considered that the student should know something, and the elimination of others which seem to have become less important; it is not a question of moving pieces about on a board, a continually increasing number of pieces for the same number of squares. Rather is it the better integration of subjects, the easier transition from one stage to another—as, for example, the passage from pre-clinical to clinical studies—the better approach to certain subjects, and, above all, the making of such arrangements as will ensure that the student not only acquires the necessary facts but is trained in the method of using them. The time-table must include opportunity for leisured reflection—leisure which may be misused by the indolent, but nevertheless must be ensured. If nothing better were turned out from the schools than living medical encyclopaedias or indices of treatment, always busily rustling their leaves, it would be a sorry thing for the patients who will afterwards come to the practitioner with their gastric ulcers, their rheumatic pains, their winter bronchitis, and each with a different temperamental and social background which calls for the philosopher often as much as for the physician.

The necessity for education, in the true sense of the word, has been well recognized in all the contributions lately made to this subject, not only by the inquiring committees but by the bodies which gave evidence before them. Thus the British Medical Association urged upon the Goodenough Committee that a full knowledge of fundamental principles would produce a more understanding practitioner, more ready to absorb and apply advances in medical knowledge and technique. The Planning Committee of the Royal College of Physicians, whose able report under Lord Moran's chairmanship appeared just before the Goodenough report and has been to some extent overshadowed by it, laid it down that the student must be taught to interpret and analyse facts, and that stress should be laid on method rather than on accumulation of knowledge. This same report put forward the idea that medical education at the universities should be free (not so great a change after all, for, expensive as it is to the student, two-thirds of it is free already, being provided by the State, by local authorities, and by endowments), so that university training, while it would still be the privilege of the relatively few, would be a privilege based on selection on the ground of ability and character and prospective fitness for the profession. Finally, the General Medical Council, in its own memorandum of evidence to the Goodenough Committee, suggested that over-organization of instruction would stultify real education, discourage the active participation of the student, depress his curiosity and initiative, and blunt his powers of observation. All the authoritative voices in medical education thus declare that, while vocational training is, of course, very important, it must not be suffered to override the larger education; that the way into medicine is not only that of apprenticeship to a craft but is also the way of the scholar, the thinker, the ever-curious student.

Those who enter the medical profession are the product of a more exacting discipline than is required in any other field. They have to master a more comprehensive range of study than those, for example, who take theology, or law, or pedagogy. Of their value to the nation in terms of monetary reward this is not the place to speak. Their higher reward is the satisfaction of doing the work which they have chosen and for which they have undergone so long and arduous a training, work which engages their entire skill and capacity, and work, moreover, which is directed to the relief of human suffering. The doctor has this further reward, that his training and experience have not only provided him with a means of livelihood but have given him an acknowledged if untitled place in wider fields than medicine. Without entering politics, national or local, or taking any official position, the doctor is tacitly regarded as one who speaks with authority in concerns affecting the community, large or small, of which he forms a part. Even people who speak slightingly of the medical profession honour the individual doctor, and that is no small tribute to the influences which have gone to make him what he is.

TEACHER AND TAUGHT

The future of medical education is probably the most important problem now facing the profession. Medicine is at one of the critical points in its long evolution, and the direction this evolution will take during the next fifty years will depend more on the type of student to be educated and how he is educated than upon anything else. Criticism of the type of student now being educated was made in severe and unequivocal terms in the Report on Medical Education issued by the Planning Committee of the Royal College of Physicians in 1944: "There are," it was stated, "in our medical schools at present, too many students who have neither the character nor ability to make good doctors." What was more disturbing than the remark itself was the reason given by the Committee for it—namely, that this situation was "chiefly due to the small number of candidates entering medicine." The low quality was not, therefore, due to dilution of the good by quantity. This must mean either that medicine is ceasing to attract able girls and boys of school-leaving age, or that the length and cost of training are too great an obstacle for the parents of those boys and girls who want to take up medicine as a career. To meet the latter the College of Physicians considers that the financial barriers should be overcome by making university education entirely free and that suitable students should, in certain circumstances, receive maintenance grants. The effect of the National Health Service Act on recruitment into medicine has concerned even those who see the Act as a progressive step forward for improving the care of the sick. It remains to be seen whether the restrictive provisions of much of the Act will deter the able and the ambitious from entering the medical profession as they have so freely done in the past.

You cannot make a silk purse out of a sow's ear any more than you can make an educated man out of a youth who is incapable of being educated beyond a certain point, and if the able youth does not have the opportunity of being fully educated he will enter into whatever career he takes up with what the Americans call a "backlog" of ignorance. "In the making of a good doctor," the College

of Physicians Committee states, "the intellectual and personal qualities of the student are at least as important as the educational discipline to which he is submitted," an observation echoed by many. The first requisite, then, is a sound general education before the student starts on his medical course, and most authorities now agree that the minimum age of entry for a medical student to a university should be 18. In his comparative study of medical education Abraham Flexner[1] considered that British medical schools were at a disadvantage compared with those on the Continent in that the student body was "a decidedly miscellaneous group." His investigation of Continental methods showed that, for example, in Germany and the Scandinavian countries the student body was "relatively homogeneous." He found that in Edinburgh, the hospital schools of London, and in the English provincial schools there were "side by side in laboratories and clinics students who took an Arts degree before beginning or in connexion with the study of medicine, students who went from the sixth form to medicine, and students who have passed the minimum examination accepted by the General Medical Council, viz., English, Latin, mathematics, and an additional language." He was severely critical of the standard of secondary education in his own country, America, and concluded that "the world urgently needs a critical and comparative study of secondary education in reference especially to professional and other higher training. . . ." In these days of intense specialization and vast increase of factual knowledge the need for a thorough general education is more necessary than ever before and especially in medicine. Too often the modern science student is like the man described in a broadcast by Prof. Andrade who, when asked who Voltaire was, said he was the man who invented the voltaic cell. If, therefore, we accept the College of Physicians' stricture on the present student those responsible for medical education must have some concern in general education and stress adequacy in this as one of the criteria for selection into medical schools.

If the teacher may thus harshly criticize the student, the student himself may have something to say in reply. The majority of medical students are destined to become general practitioners. Many who have gone into general practice look back upon their student days and ask themselves: "How far did my training go in preparing me for the job I am now doing?" It is all very well for the teacher to say of his student, "This is poor stuff," but what, we may ask, does the teacher do to make the best out of it? The general practitioner cannot help recalling the dreary hours he spent peering through a gap in somebody's armpit at an operation he would never be called upon to perform; of the time he spent listening by the bedside to a physician learnedly discoursing on the differential diagnosis of an obscure neurological case with an incidence in the population of one in several thousands; of listening unprofitably to badly delivered lectures amounting to no more than what appears in standard textbooks. And, to go a little further back in his education, he will recall the soul-destroying efforts to memorize with the aid of slightly obscene mnemonics the relations of the posterior triangle of the neck and the branches of the internal carotid artery. In general practice, we are told, something like a third of the patients are suffering from psychological disturbances. Faced with patients who are anxious and hypochondriacal the general practitioner looks back into his medical education for guidance and can recall only dramatic visions of patients with advanced G.P.I. and such other museum specimens from the shelf of organic psychiatry.

In earlier times, when less facts were known and the teacher of medicine was first and foremost a cultured man, the student, we suggest, suffered less than he does now. With the growth of specialization and the tendency to elect to teaching hospital staffs men who are specialists rather than general physicians the remoteness of the teachers of medicine from the problems of general practice becomes greater rather than less. We put this matter in a manner which has an element of exaggeration to illustrate what is a cardinal difficulty in the education of the majority of medical men—namely, that those who go into general practice are educated by specialists. The idea of apprenticeship is returning, an expression of awareness of this difficulty. In the U.S.A., where specialization has been carried further than in any other country, the position and problems of the general practitioner are a recurrent theme in the American medical press. It seems that thoughtful American medical men are now waking up to the shortcomings of over-specialization and to the neglect of general practice. It is no less an urgent problem in Great Britain.

Compared with general education medical education suffers from lack of experiment. Teaching in the medical schools tends to become stereotyped and determined by the qualifying examinations. The men who teach have no training in this difficult art and most of them pursue it only as a part-time occupation. Teaching must depend upon the material available for the purpose—sick persons whose welfare must come first. When all these difficulties are considered it is indeed remarkable that medical students are taught as well as they are and that the general standards of practising medicine are kept at such a good level. It is a tribute to the devotion to their task of those who man the staffs of the teaching hospitals. Yet it should be possible to introduce the experimental method into the teaching of medical students in the same way as experiments are made in the field of general education. The College of Physicians, representing an important body of teachers, lays great stress on the teaching of principle and method and deplores the excess of factual knowledge the student is expected to acquire. Flexner, asserting that medicine must be regarded as an inductive science, concluded that "the medical school cannot expect to produce fully trained doctors." The attempt in the supposed interests of the public to do this is possibly what lies at the root of much that is wrong with medical education. The medical school, Flexner went on, "can at most hope to equip students with a limited amount of knowledge, to train them in the method and spirit of scientific medicine, and to launch them with a momentum that will make them active learners—observers, readers, thinkers, and experimenters—for years to come." His emphasis was less upon teaching than upon learning. In much of what is written on medical education the stress is on "teaching." The student in some schools is "spoon-fed" by teachers who, with some natural desperation, believe the student to be incapable of feeding himself. Flexner says elsewhere that in the real sense of the phrase the educated man is self-taught. The value

[1] *Medical Education*, 1925, Macmillan, New York.

of the University education is that it gives the student freedom to teach himself, and in this "doing" and "observing" are the best instruments and a necessary prelude to reading and thinking. Bernard Shaw once said: "He who can does; he who cannot teaches." The medical teacher is one of the exceptions to this in that he both does and teaches. First and foremost he is a "doer," which perhaps makes him impatient with the problems of teaching. However dissatisfied those in the medical schools may be with the present type of student, we would suggest that they should seek to become dissatisfied with current methods of teaching.

A GOODLY FELLOWSHIP

"A man's virtue is surely to be perceived in his attitude to suffering. The lowest among us are they who inflict suffering and laugh at it and those who decline to take human suffering into account when making their plans for aggrandizement and expansion. Only those who face suffering with tenderness and attempt to assuage it have reached full human stature. To these last you belong." In these lofty words Prof. F. A. E. Crew epitomized the inspiration and motive of the man who adopts medicine as a vocation. He was proposing a toast at the Final Medical Year Dinner at Edinburgh a few months ago. He spoke as one separated from his audience by "great disparity of age." Despite the numerical difference between his age and the average age of his audience his address showed how the truly scientific mind remains perpetually youthful. In his well-chosen words he caught the high note of inspiration which sums up the idealism of the young man who feels called to practise medicine—a note inevitably lacking in the more solemn contributions to the problems of medical education, but in these days of austerity and materialistic thinking more needed than ever before. "We," he said, "who must shortly hand on the torch to our successors sorely need your reinforcement, and so we bid you welcome. We are permitted to refresh our hopes at the springs of your youth." In a moving tribute to the dead, and claiming for medicine a special function in preserving the ideals for which the sacrifice of war had been made, he added: "You belong to that goodly fellowship of medicine which is dedicated to the betterment of man and of society; and of all the instruments that are now being used for the amelioration of mankind there is none so powerful, none so beneficent as is medicine, which demands for its service and elicits in its practice the noblest qualities with which mankind is potentially endowed."

Government, Crew went on, was increasingly occupied with "the satisfaction of human biological needs," and for this reason the profession of medicine held a pre-eminent position. So he urged his listeners to beware lest they lost "that intellectual honesty which at this moment is undoubtedly your most prized possession." The world into which the final-year student would soon be passing was "dominated by science in application and managed by careerists who have acquired the jargon and the patter of science—without its humility, its ethical neutrality, its open-mindedness and its honest scepticism." Science is what men make of it, and medical science is what doctors make of it. Honest scepticism and intellectual integrity are perhaps more difficult to maintain in medicine than in any other natural science, if for no other reason than that the sick person clamours for magical powers, unaware of the imperfections of medicine as a healing art. Knowing the limitations of medicine, the medical man nevertheless finds it difficult to remain uninfluenced by the mental environment of his patients, and so at times he too readily believes in the efficacy of this or that remedy or method of treatment. And so often there is more hope than truth in the therapeutic fashion of the day. This is reflected in the spoken and the written word in medical meetings and medical journals. "Medical men," Crew said, "stand in great danger of becoming expert in the use of a language which is sonorous, impressive, and utterly void of meaning. They quickly learn that in our society a man, by concealing his lack of ideas with a cloudclap of words, can make himself virtually invulnerable." And as an instance of the lack of understanding of medical principles and of human nature he quoted "the truly astonishing statement" of the Parliamentary Secretary to the Ministry of Food that in this country "every social unit was enjoying a calorie intake of 2,900." This, he said, was not the language of medicine but "the staccato stuttering of statistics."

An echo of Crew's viewpoint was heard last week at the British Association when Dr. Edward Hindle, President of the Zoology Section, repeated Walter Moyle's regret when he revisited the Royal Society in 1716 after some years of retirement: "There is now no room for natural philosophy in Gresham's College: mathematics has engrossed all." It is possible, as Prof. Bradford Hill suggests elsewhere in this issue, that mathematics should engross medicine more than it does. But medicine, we believe—and there are many hints from many directions that this is necessary—should see itself as a part of natural philosophy. We may not go the whole way with Crew when he says that "the scientific knowledge which we already possess is enough to transform the whole quality of life for mankind," although he was supported from an unexpected quarter by Mr. Harold Nicolson when he said in a broadcast that happiness depended on good bodily health. Yet Crew is surely right in claiming for medicine immense powers which society at large prevents it from using. In claiming this he at the same time urged his student audience to avoid complacency and to keep "a persistent sense of fierce dissatisfaction with yourselves and with things as they are."

The bond between teacher and student is strong, and especially in medicine. It found its expression in the Hippocratic Oath, and it has always guided medical education along its very imperfect path. Crew ended his *Ave atque vale* with words that many a teacher would like to use in a similar and constantly recurring situation: "You take with you into your future the warm sympathy of your teachers. To us you are very precious, for you are the children of our minds, our terrestrial continuance. You will forgive our many shortcomings—we have not done all we could have done, all we intended to do—but we have tried in our own ways faithfully to serve. We shall follow your careers with very great interest, and in our slippered senescence we shall enjoy the reflected glory of your service to mankind, claiming you as instruments in whose fashioning we had a hand."

A PROPHET IN MEDICAL EDUCATION

In preparing this Educational Number we turned again, with heightened appreciation, to the "Memorandum on Recent Advances in Medical Education in England," which Sir George Newman, then Chief Medical Officer of the Ministry of Health, addressed to the Minister of that time, Mr. Neville Chamberlain, nearly twenty-five years ago. The word "memorandum" suggests something ephemeral or provisional, but this is a solid treatise of almost 200 pages, covering the whole field, and it has not lost its appropriateness nor been replaced by any subsequent work of a similar description. One of Sir George Newman's texts was: "The purpose of the medical curriculum is the training, not of specialists, but of general practitioners." That reminder is still needed in 1947. A quarter of a century ago the same complaint concerning the overloading of the curriculum was being made as has been made ever since and was probably made long before. The student was being "overfed for his years." Sir George Newman pointed out that the real business of the curriculum is to establish a man as a practitioner in the fundamentals, to guide and direct his course of learning, and to give him an enduring inspiration.

Writing many years later on medical education, particularly in America, Prof. Helena R. Wright, who holds the chair of Social Service Administration in the University of Chicago, carried the point further. She said that, while the great majority of students go out into general practice, the general practitioner as such has no share in the teaching of the medical school. The student there comes into contact with patients only through specialists, and builds up a picture of medical practice which is a most complete and rather formidable composite production, the work of one specialist after another, but is very different from the picture which faces him when he goes into the community to practise his profession and John Jones comes complaining of lumbago and wants to know what can be done for it and cannot afford to lay up. It is not that the practitioner goes out into the world inadequately equipped, but his equipment is not always well balanced, the pack is not well adjusted to his shoulders. Medical education, after all, is only a part of general education and shares its tendencies, one of which is the reception of a tremendous accumulation of facts—more and more facts as the branches of knowledge expand and new branches are created; and it is forgotten that the object of education is to enable the student to see things clearly and to see them whole—to see the wood as well as the detail of certain selected spinneys. Fortunately, in medical education the Goodenough report, followed by the new recommendations of the General Medical Council, and already anticipated by some of the schools, has supplied a certain corrective. The student is being encouraged to study the patient, the whole patient, and the surroundings of the patient. Even twenty-five years ago those at all events in the van of medical education, as Sir George Newman's memorandum makes evident, understood the importance to the student of an understanding of the patient's psychology and temperament, as well as the social and economic factors in his background. The term "social medicine" had not then become current; it is now recommended as a subject for the curriculum—in the clinical period by the G.M.C., in the pre-clinical by the Goodenough Committee. It is a term which may be defined narrowly or broadly. The Goodenough definition includes prevention of disease, promotion of health, the effect on health of social environment and heredity, and the communal aspects of health and sickness—which seems about as wide as it can be.

Sir George Newman concluded on an optimistic note. He said that while frequent revisions of the curriculum were not to be expected, nor changes in medical policy as rapid as in recent years—meaning the years immediately following the war of 1914–18—"there is a tide of new life and aspiration passing through men's minds of far-reaching possibility." The troubled years which have followed have been years of frustration, in medical education as in many other things, but the prophecy of the early twenties may begin to find fulfilment in the late forties.

STUDENTS WHO FAIL

Failure during medical training is a serious matter. For the student it is often followed by a loss of confidence in himself, perhaps with some embitterment, as well as by natural concern over wasted expense and effort—a concern more than shared by the parent who foots the bill. For the medical school, and ultimately the community, there should be the question of whether or not everything was done that might have helped to avoid such a result. In the first place, was the student a good candidate for the training vacancy he filled? Was a watch kept for danger signals in his lack of progress, and was there any known source of help with difficulties that the student could use? And when he had to give up, was his failure satisfactorily understood?

Questions of this kind emphasize the unsatisfactory situation in most of our universities to-day regarding the investigation and treatment of student failures. Proper investigation is essential if the individuals are to be given the best advice. It is also necessary for the light it throws on problems of general importance in the task of enrolling the future members of the profession. Thus, in recent years improved methods of selection have been thought of as a way of preventing the occurrence of failures. While no one would claim that a method of selection, however good, would completely eliminate failure of the student "to make the grade," the careful study of failures would, nevertheless, direct attention to what might be the best grounds of acceptance for training.

A recent study carried out by the psychiatry department at Michigan University[1] brings out some interesting points in this matter. After a preliminary survey of students who failed, a fuller investigation was made which included all the freshmen of one year. The result emerging from a comprehensive battery of tests was that the outstanding difficulties of the students who failed would not have been disclosed "in any one type of test nor by any numerical scoring system." Emotional difficulties were more prominent than lack of ability in those who failed. More important still, however, was the fact that many of these individuals responded sufficiently well to treatment to do more satisfactory work. "As a consequence of the investigation, the dean and the promotion board refer routinely students who have difficulties in the medical school and almost invariably the recommendation of the department of psychiatry is accepted."

The report of such a study, though far from comprehensive, throws into relief the contrast between the universities and good industrial firms in the provision for the well-being and successful development of their "workers." Few progressive firms to-day would do without their "personnel departments," and a therapeutic endeavour of this kind would surely seem to be not beyond the scope of a medical school. It is a controversial subject, and an open debate on it by a gathering of medical school deans would no doubt reveal a diversity of opinion on the subject.

[1] Waggoner, R. W., M.D., and Zeigler, T. W., Ph.D., *Amer. J. Psychiat.*, 1946, 103, 369.

"Caught red-handed." The earliest known representation of a dissection, *c.*1290 (M.S. Ashmole 399). Reproduced from the *Catalogue of an Exhibition of Books on Medicine, Surgery, and Physiology*, 1947, by permission of the Librarian, the Bodleian Library, Oxford.

BODIES FOR DISSECTION

[FROM A CORRESPONDENT]

Until the beginning of the 19th century the study of human anatomy was hampered in a manner peculiar to that branch of science: though the materials required for its pursuit were everywhere abundant, religious belief, popular prejudice, and superstition prevented their being used. To dissect a dead body was to desecrate it—a belief still prevalent among the less educated even in civilized countries. Fortunately, however, there were always a few individuals so degraded in life that execution was not sufficient expiation, and dissection, usually in public, became an accepted epilogue to careers full of incident.

Executed criminals were the permitted source of supply during the 14th, 15th, and 16th centuries, and the universities and other centres of learning in Europe obtained the right to dissect a specified number of bodies annually—usually one to four—with the proviso that the anatomists should treat them with respect, arrange their burial, and attend Mass for the departed souls. These provisions were later legally augmented in various ways: in Edinburgh by including "the bodies of fundlings who dye betwixt the tyme that they are weaned and thir being put to schools or trades; also the dead bodies of such as are stiflet at birth, which are exposed . . . such as are *felo de se*, and have none to owne them; likewayes the bodies of such as are put to death by sentence of the magistrat and have none to owne them." In England an Act of 1751 decreed that executed murderers should be either gibbeted or conveyed to the Hall of the Surgeons' Company for public dissection; and in France and Germany similar measures were enacted.

In spite of the official recognition of anatomy, however, the general populace continued to regard it with the utmost loathing. The Barber-Surgeons' Company of London used to send their beadles with a cart to Tyburn to collect the criminal's body when he had been duly executed by the hangman, but it was usual for the relatives of the deceased to incite the mob against the beadles, and in the excitement of the occasion riots commonly occurred. The annals of the Barber-Surgeons, as Young records, contain numerous notes of payments such as the following:

"1735–6. Paid the High Constable for the expenses at the late execution when the body was rescued: £3 13s. 6d.

"Paid the Beadle's expenses in prosecuting John Miller, one of the Persons who assaulted the Constables and rescued the body: £2 2s.

"1739. Paid the Beadles for their being beat and wounded at the late execution: £4 4s.

"1740. Paid for mending the Windows broke upon bringing the Body from Tyburn: 6s."

The executioner sometimes caused trouble and sided with the mob, for he was often a trafficker in corpses himself, and in any case was entitled to the criminal's clothes as a perquisite. The surgeons had to contend not only with the executioner and the mob in obtaining bodies, but on several occasions with a hanged man who came to life. In 1587 a man hanged at St. Thomas Waterings was transported to the Barber-Surgeons' Hall in a chest; on its being opened he was found to be alive. He died three days later. The Company incurred some expense over him, and not wishing to do so again on behalf of one of their members, since he was a "private anatomy"—that is, not one of the four executed felons permitted for public dissection annually—they recorded on July 13 of the same year that in such cases "the charges about the same bodie so reviving shall be borne levied and susteyned by such person or persons who shall so happen to bringe home the Bodie."

The Resurrectionists

Public disapproval of dissection continued unabated by the advance of the scientific outlook during the 18th century, and the troubles of the anatomists, whose science shared in that advance principally owing to the inspiration of William Hunter at the Windmill Street School, increased as their numbers grew. For the first time the supply—we include the tactfully illegal with the legal—failed to meet the demand, and the resurrectionists started their highly organized racket. Paupers used occasionally to offer their bodies for sale to the anatomists—the money to be paid immediately, of course—but this was more in the nature of a confidence trick than a business transaction, since the law does not recognize property in a corpse, except in so far as it belongs to the next of kin for disposal according to law, and a surgeon was therefore unable to establish a legal claim to his bargain when it died. With the growth of rationalism, however, men occasionally decreed in their wills that their bodies should be dissected—for instance, Jeremy Bentham, "so that mankind may reap some small benefit in and by my decease." Dr. Southwood Smith kept Bentham's skeleton in his consulting-room for many years.

Contemporaries of the resurrectionists regarded them as loathsome criminals, "the lowest dregs of degradation," to quote Sir Astley Cooper's phrase, and likely to commit any crime to satisfy their all too human lust for lucre. No doubt they often stooped to petty thieving, blackmail, and bribery; certainly they included among their number many whose principal means of livelihood was highway robbery and "breaking and entering"; but the typical and most successful resurrectionists left the grosser forms of crime well alone. They were graveyard "spivs" rather than dangerous felons, hawking bodies instead of the black-market goods that their counterparts peddle to-day. Murderers like Burke and Hare were exceptional.

The raising of bodies, or "things" as they were called in the slang, was normally carried out at night. The resurrectionists not only bribed the watchmen, sextons, and other interested parties to allow the exhumation to go unhindered, but also paid many of them regularly, as well as common lodging-house keepers, workhouse supervisors, hospital attendants, and undertakers, to inform them when a person died. This led to the relatives' keeping watch themselves in many cases, but even then the resurrectionists were not defeated, for these ingenious men might mix with the mourners at the funeral and whisk the body out of its grave as soon as the gathering had dispersed, or, if that proved to be impossible, they would get the relatives thoroughly drunk by nightfall and remove the corpse when the intoxicated guard took over. If an undertaker could be bribed to fill his coffins with rubbish and slip the "things" out through the back door, so much the better; and quite the lowest form of resurrectionist was not above stealing corpses at one school of anatomy to sell them at another.

The resurrectionist's dream of an exclusive and perpetual source of supply came true when Murphy—one of the most prominent of these men—and an accomplice whom the teller of the tale, Bransby Cooper, called Patrick since he was still alive when it was published in 1843, discovered a private burial place near Holywell Mount, in London, owned by two old ladies. They acquired this information from a man named Whackett, grave-digger and superintendent of the ground, and induced him with a suitable bribe to leave the gate open at night. So many were the bodies Murphy and Patrick obtained from this "crib"—that is, graveyard—that they excited the astonishment and envy of their rivals, who proceeded to investigate the matter. Two of them, Hollis and Vaughan, finally discovered it and tried to bribe Whackett for a share of the supply. He proved to be immutable, and their importunities so enraged him that he ran across the street to a public house, which was full of labourers, and shouted, "Those fellows are body-snatchers come here to bribe me to let them raise from my ground!" The men rushed out to attack Vaughan and Hollis, who, contriving to escape, in revenge went immediately to a crowded police court where a magistrate was at the moment presiding, and announced that if he sent officers to Holywell Mount they would find every grave despoiled of its dead, Whackett having sold them to body-snatchers. The occupants of the court hastened to the graveyard, the crowd swelling as they passed through the streets, and on arrival seized Whackett and began furiously digging up all the graves. The allegation appeared to be true. Whackett was thrown into one of the deepest holes and earth shovelled over him. The constable rescued him just in time. The mob then destroyed every article in Whackett's house, dragged his wife and children through a stagnant pool, and smashed all the windows in the house of the two old women, who were in fact innocent of connivance in the scheme. The story does not end there. Vaughan was rash enough to commit some offence for which the police sought him. Murphy betrayed his hiding-place, and he was sent to Maidstone Jail for two years.

Such was the gang warfare that prevailed in the highly competitive business of exhumation. Disinterment itself was decided to be a misdemeanour by the court of King's Bench in the case of Rex *v.* Lynn in 1788; even though carried out for the purpose of dissection, it was an offence *contra bonos mores* and common decency. This did not deter students from an occasional "Visit to the Tombs," and one such visit was described in our columns recently (July 12, p. 67). It was customary, when genuine resurrectionists got into trouble with the police, for the surgeons to pay large sums of money to keep them out of jail or to support their dependants, and Sir Astley Cooper told the Select Committee on Anatomy that "at the present moment two surgeons are bailing a man at the expense of £100 who has been detected in exhumation." The difficulties under which the anatomists laboured were added to in 1828 when Davies, a medical student, was found guilty of possession of a cadaver, though not a party to its actual disinterment, and fined £20.

The Craft of Exhumation

Speed and cleanliness of the surrounding soil were the two chief requisites in "raising" bodies. The method usually adopted was to remove a square of turf at the head end of the grave, dig a hole as small as was manageable down to the coffin, and insert a claw-shaped crowbar under the lid. Levering up the exposed part of the lid—about a third—the exhumator could snap it off against the earth covering the other two-thirds. He then tied a rope round the corpse's neck and pulled—not steadily, but in short jerks. It was important to fill in the grave carefully and leave it tidy so that the robbery should not be discovered the following morning. Many a mourner must have wept over an empty grave. On a few occasions relatives tried to defeat the body-snatchers by packing the corpse in quicklime, but most people seem to have shrunk from thus hastening its dissolution.

The expert resurrectionist with two or three sober and industrious assistants (they were often neither) might raise five or six bodies in a night in this manner if circumstances were favourable. An element of class distinction entered the matter, for the coffins of the poor were buried in shallower graves than those of the wealthy and were made of cheap wood, having lids that could be easily cracked open with the crowbar. When "A. B.," who was probably Ben Crouch, a leading resurrectionist at the beginning of the 19th century, was giving evidence before the Select Committee, he expressed his preference in the following words: "When I go to work I like to get those of poor people buried from the workhouse, because instead of working for one subject you may get three or four I do not think during the time I have been in the habit of working for the schools I got half a dozen of wealthier people." The poor, of course, were well aware of this preference, and when the Select Committee asked "A. B.," "What do you think to be the feeling in London, of persons of the lower classes in life, concerning surgeons having bodies for dissection?" he replied with some vehemence, "They would not mind shooting a man as dead as a robber if they caught him in a churchyard."

A third resurrectionist, "C. D.," who was probably Naples gave the Select Committee some interesting details of the numbers of corpses he had supplied to the medical schools: "Will you state to the Committee what was the number of subjects you supplied to the anatomical schools in 1809–10 [i.e., the year that included the winter common to both]?"

"The number in England was, according to my book, 305 adults, 44 small subjects under 3 feet; but the same year there were 37 for Edinburgh and 18 we had on hand that were never used at all." "Now go to 1810 and 1811?" "312." "Adults for that year?" "Yes, and 20 in the summer, 47 small." "1811 to 1812?" "360 in the whole, 56 small ones, these are the Edinburgh ones and all." And the next year Bristol was supplied as well.

The extent of this trafficking was one of the main reasons for the Select Committee's being appointed. The demand for bodies continued to increase; the number of resurrectionists swelled to keep pace with it, and this in turn made competition all the keener. Watchmen, undertakers, and all the rest of the dishonest crew of informers kept the resurrectionists bidding against each other for their exclusive services. Bribes had to be increased, and with them the price of the cadavers, with the result that financial considerations came seriously to impede the study of anatomy. The Select Committee asked Sir Astley Cooper, "What is the present price of a subject?"

"Eight guineas."

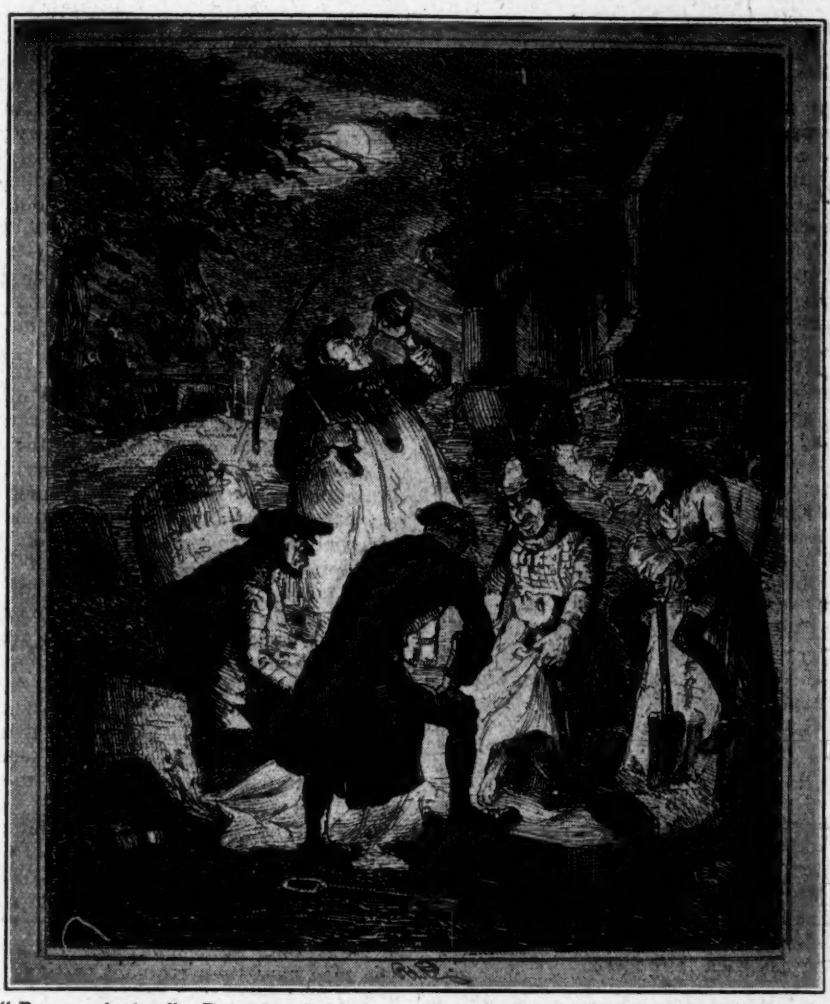
"At what do you remember it to have been formerly?"

"When I entered the profession it was two guineas; since that period it has been fourteen."

In reply to a question whether the existing law prevented bodies being obtained Sir Astley Cooper said, "The law does not prevent our obtaining the body of an individual if we think proper; for there is no person, let his situation in life be what it may, whom, if I were disposed to dissect, I could not obtain."

"If you are willing to pay a price sufficiently high you could always obtain the body of an individual?"

"The law only enhances the price, and does not prevent the exhumation. Nobody is secured by the law, it only adds to the price of the subject." Moreover, the scarcity of cadavers, apart from increasing their price, led to the dissections and lectures often being suspended for many weeks at a time, and, as the Committee commented, "The pupils are exposed to the danger of acquiring habits of dissipation and indolence."



"Resurrectionists." Reproduced from an illustration by "Phiz" in Camden Pelham's *Chronicles of Crime*, by permission of the Librarian, the British Museum.

The Anatomy Act

By the beginning of the 19th century the murders and body-snatching had sufficiently shocked the public, and the doctrines of the Utilitarians had permeated deeply enough for general approval to be given to the Select Committee's recommendation that dissection should be regulated by law. A Bill with this object was introduced in 1829. It passed the House of Commons successfully, but the Lords rejected it on the grounds that it condemned the bodies of the poor to an indignity that those of the rich would escape.

A second Bill was therefore introduced in 1831, and in 1832 was enacted as 2 and 3 William IV c. 75 under the short title "An Act for Regulating Schools of Anatomy." This Act permits medical students and other appropriately qualified persons to dissect human bodies, with the proviso that the nearest surviving relative shall give his or her approval, regardless of whether the deceased had given permission or not. Among the many opponents of the Bill, and perhaps the most remarkable, was the *Lancet*, which contended that it would legalize the buying and selling of bodies, encourage the resurrectionists and murderers, and fail to diminish the students' expenses. A leading article (1831–2, 1, 509), commenting on a letter from the Council of the Royal College of Surgeons to Lord Melbourne which advocated the need for an Anatomy Bill, spoke of that august body as follows:

> "Oh! how tamely the members of our profession have submitted to the insults of this self-perpetuating oligarchy! Contemptible in number, almost contemptible in talent, despised for their tyranny, abhorred for their injustice, yet have they menaced with their noxious authority—under the protection of their baneful powers—the great body of English medical practitioners."

The surgeons and others nevertheless got their bodies—chiefly from the poorhouses, hospitals, and mental asylums—and the supply was sufficient until the end of the 19th century. Since the turn of the century the rising standard of living combined with the increasing number of medical students has made the supply more precarious, and in fact it is now inadequate. Destitution is almost a thing of the past; no doubt the poorhouses soon will be; every year fewer bodies lie unclaimed. Unfortunately, though public opinion long ago sanctioned dissection, private opinion, as is not unusual, continues to resent it deeply. Bequests of bodies are at present far too few to meet the demand (and in any case ineffectual if the relatives oppose them), and no doubt the Government will have to tackle the problem. We understand that in the last two years numerous representations have been made to the Minister of Health.

Presumably any endeavour to increase the supply must be preceded by a decorous "propaganda campaign" to convince the people that body donors are as urgently needed as blood donors. It will surely be impossible to legislate that bodies be obtained from certain sources, such as hospitals or prisons, without arousing insuperable opposition from the public at present; and if public opinion is so changed as to approve of such a measure, possibly the bequests alone would be sufficiently numerous to obviate the need for legislation.

THE UNDERGRADUATE MEDICAL SCHOOLS

PLANS AND PROSPECTS FOR NEW ACADEMIC YEAR

Through the kindness of the several deans, who have not objected to filling up yet one form more, we are able to present a survey of the position in the medical schools of Great Britain, Northern Ireland, and Eire at the advent of a new academic year. On three questions in particular information was sought: first, as to any changes or innovations in the curriculum following on the report of the Goodenough Committee and the more recent recommendations of the General Medical Council concerning changes in the curriculum; secondly, the likely effect of compulsory national service on the student position; and, thirdly, the opening of the door in all the schools to women students.

Innovations in the Curriculum

All the schools appear to be in process of readapting the curriculum, but such changes cannot be made by a stroke of the pen. At Edinburgh a complete revision of the whole course of study for the M.B., Ch.B. degree, based on the recommendations of the Goodenough Committee and the G.M.C., is being undertaken, and it is hoped to start the new curriculum in October, 1948. At Westminster Hospital Medical School the curriculum has recently been revised. During the first three months of the 36-months period for the London M.B., B.S. the students attend a set course which includes a larger number of lectures than hitherto. During the next twelve months they attend two medical and two general surgical firms, with a certain number of lectures, and during the subsequent fifteen months they attend five special firms, including three months in a paediatric firm, during which they receive intensive instruction in children's diseases. Other London schools—the London, St. Mary's—have instituted a special introductory clinical course; and yet others—King's College Hospital, St. George's, St. Bartholomew's—have introduced instruction in social or industrial medicine.

At Liverpool the curriculum has been modified considerably in accordance with the G.M.C. recommendations; at Sheffield a new curriculum on the lines of those recommendations will come into force in October; at Leeds the staff is being enlarged and the curriculum replanned on the same lines; and at Cardiff, so far as it is possible under present conditions, both the Goodenough and the G.M.C. recommendations have been adopted.

A new curriculum was introduced at Queen's University Medical School, Belfast, a year ago, affecting as yet only pre-medical subjects, to which now one whole academic year is given. As the students who entered in 1946 make progress the curriculum is being altered throughout its length. In general the Faculty at Belfast has adopted the G.M.C. recommendations, and quite extensive parts of the Goodenough report have been put into operation over the last two years. A course in the history of medicine has been introduced.

The Effect of Conscription

On the effect of compulsory national service upon the student position some of the deans offer no opinion, but the majority say that there will be no effect at all, or that the effect will be only of slight extent, giving the school a more mature type of student. It appears to be the general opinion that the students will elect to take their service in the Forces first, and then go on to their studies; this is likely to obtain so long as the schools continue to give priority to ex-Service candidates; but a number of students may choose to take first their medical course. One dean remarks that a number of parents seem to be in doubt whether to prefer their sons to do their national service as combatants before qualification or to serve in a medical capacity after qualification. This dean says that he has, after some hesitation, come to favour the second alternative "as the lesser evil."

The dean of the Liverpool Medical School foresees a student entry divided in this respect. From now onwards, he says, a proportion of students will enter the medical schools before their national service has started and another proportion after that service has been completed. At Liverpool, therefore, it is proposed to choose each year about 60 to 65 of the best applicants from the schoolboys seeking admission. Of this number say 30 will be taken into the school forthwith, the remaining places going to men who have already completed their service; the other 30 or 35 schoolboys of the year will be given a firm letter of promise of admission after their national service, subject to a satisfactory certificate of conduct while in the Forces. It is thought that this will reassure parents and guardians, and will fit in with a process which is inevitable for as long as compulsory national service continues.

The Woman Student

These considerations will not apply to women students, unless, of course, the claim of the Medical Women's Federation that compulsory national service should be exacted from women on the same basis as for men is conceded. Practically all the medical schools now admit women, generally in the proportion of 15 to 25% of the total admissions. Among the London schools St. Bartholomew's admits not less than 15%, Charing Cross 20% of the total entry; Guy's, approximately 12 out of 100; St. Mary's, 10 out of 90; University College Hospital, 14 out of 70; King's College, 25%; the London, 15%; St. George's, 5 or 6 a year out of an entry limited to 30 students; St. Thomas's, 15%; Westminster, up to 15%; Middlesex, 12 out of 80.

At Oxford the number of women to be admitted during the academic year 1947–8 is 10 women to 55 men; at Bristol women students are admitted to a maximum of 25% of the total; at Liverpool, from 20 to 25%; at Sheffield, the same; at Manchester, about one woman to three men; at Leeds women students are admitted, "but of necessity in only very limited numbers at present"; at Birmingham about one-third of the admissions are women. In the Welsh National School of Medicine, by the charter of the University, there is no restriction on the admission of women students, and in practice women fill from one-fourth to one-third of the vacancies. At Edinburgh approximately 25% of the places are occupied by women. At Glasgow between 30 and 40 women students are admitted out of a normal entry of 180. At Aberdeen the number is 20 out of an expected entry this year of 92. At Queen's University, Belfast, women are admitted on an equal basis with men, and there is no limit to the percentage of women candidates in any one year. At Trinity College School of Physic, University of Dublin, women are admitted on the same terms as men, but it is added that as almost one-third of the present students are women the tendency in the future will be to limit the number of places to be made available for women students.

On the other hand, at what has hitherto been known as the London (Royal Free Hospital) School of Medicine for Women, but is in future to be called the Royal Free Hospital School of Medicine, revisions to the charter have just been approved by the Privy Council allowing the admission of men students to the school. Such admissions will begin from October, 1947. The men have been required to sit for the entrance examination, and both men and women have been accepted on the results. No quota has been fixed, but the majority of students are women.

London University Undergraduate Schools

The Schools (some of them postgraduate) of the Faculty of Medicine of the University of London number twenty-one. They include the twelve schools each associated with a London teaching hospital, the pre-clinical schools of University College and King's College, the London School of Hygiene and Tropical Medicine, the Lister Institute of Preventive Medicine, the Royal Dental Hospital (for dentistry only), the Maudsley Hospital (for research in psychological medicine), the College of the Pharmaceutical Society (for pharmacy only), the Royal Cancer Hospital, Free (for research in pathology and radiology), and the British Postgraduate Medical School. There are recognized teachers of the University on the staff of the National Institute for Medical Research, Hampstead, and the Royal London Ophthalmic Hospital.

At Charing Cross Hospital Medical School building operations are proceeding apace for full opening in October. The

teaching staff numbers between 30 and 40, and the expected entry of students—also the limit of entry—is 45. The departments of anatomy and physiology, which have been closed for a long period, will be reopened at the beginning of the new session. The school is in affiliation with the hospitals of the Middlesex County Council and with the Royal Dental Hospital for teaching purposes. Charing Cross Hospital and School are expected to be completely rebuilt at Harrow within the next ten years.

The expected entry at Guy's Hospital is 100 approximately, which is the limit of the annual entry. Guy's students are encouraged to undertake undergraduate resident appointments at outside hospitals such as Preston Hall, near Maidstone, for tuberculosis, and Park Hospital, Hither Green, for fevers.

King's College Hospital, Denmark Hill, has an entry of 50 medical and 25 dental students. The hospital is affiliated with Horton Hospital, and when this arrangement terminates at the end of the year it is hoped that similar arrangements will be effected with other hospitals. The long-term policy is to increase the number of beds on the present site to 1,000, and in the meantime it is hoped by association with neighbouring hospitals to provide for double the present number of students.

At London Hospital Medical College the expected entry of students is 80. The school is in full use and the teaching staff at normal strength. Maternity teaching is given at the Mile End Hospital near by. Long-term projects include the complete rebuilding of the medical and dental schools.

The Middlesex Hospital Medical School has its buildings fully in use and its staff at normal strength, and takes its usual quota of 80 students annually. Students are admitted to the recognized course for the first M.B. The Central Middlesex Hospital, Acton, and Mount Vernon Hospital, Northwood, are affiliated with Middlesex for clinical instruction.

The Royal Free Hospital School of Medicine, now to be a school for men as well as women, has a limit of entry of students of 70 for the first year, and a maximum of 30 into the second year according to the number of failures or withdrawals in the first year. The hospital becomes the parent of a teaching group under the National Health Service Act. It has the use of some beds at the Liverpool Road Fever Hospital and certain facilities for the teaching of medicine and pathology at the Archway Hospital, and it is expected that there will be an extension of facilities in these and other L.C.C. hospitals. The bombed site in Tavistock Place adjoining the present buildings has been acquired by the school, and it is hoped to erect a laboratory wing there as soon as possible.

The Medical College of St. Bartholomew's has an expected entry of 130 students. The entry later is to be limited to 100. Teaching staff is at normal strength, and plans for rebuilding the pre-clinical college, which was destroyed during the war, are well advanced.

St. George's at Hyde Park Corner is one of the smaller schools, with an expected entry of 25 and an annual limit of 30. It is in affiliation for teaching purposes with the Victoria Hospital for Children, Tite Street, Chelsea. Child psychiatry is a recent introduction in St. George's curriculum. Plans are being prepared for rebuilding and enlarging on a new site which will enable the school to take an annual clinical entry of 80 and to teach pre-medical subjects.

St. Mary's at Paddington has an expected annual entry of 90, with an annual limit of 100. It is affiliated with Paddington (L.C.C.) Hospital. Lectures have recently been introduced here on general practice, genetics, and statistics. The long-term policy is the completion of the school buildings.

St. Thomas's takes 100 students a year into the clinical period, but at present the entry is restricted to 80, owing to shortage of beds. The long-term policy is a complete new set of buildings. Implementation of the G.M.C. recommendations depends largely on increased accommodation.

University College Medical School has an expected entry of 70 students and a limit of 75. It is affiliated for teaching purposes with the North-western Fever Hospital.

At Westminster Hospital Medical School about 45 clinical students enter each year (say 25 in April and 20 in October). About 120 clinical students are in attendance. There are facilities for 150, but lack of accommodation at King's College, Strand, where the majority of students take the pre-clinical course, restricts the number entering for the clinical period. Although at this school, as at others, 90% of the places are reserved for ex-Service candidates, in practice it has not been possible to fill all these places with suitable ex-Service students. In October the entry will be approximately 60% from school and 40% ex-Service (this refers, of course, to students entering the pre-clinical department at King's). The Infants Hospital, Vincent Square, now called the Westminster Children's Hospital, and All Saints' Hospital, Vincent Square, for genito-urinary cases, have been amalgamated with the Westminster. At least one other amalgamation is in prospect. Plans are on foot for the building of a new school with pre-clinical (anatomy and physiology) departments, and chairs of medicine, surgery, and obstetrics and gynaecology are projected as a long-term policy.

The West London Hospital at Hammersmith has been an undergraduate medical school since 1937, and at the moment admits women students for the clinical course only. The pre-clinical course is taken at University College for London students, and a number from Oxford and Cambridge are also admitted. During the war a certain number of students did their pre-clinical work at King's College, Strand, but this arrangement ceased at the end of the war. The University is anxious for the school to devote its resources and organization to the postgraduate training of specialists, particularly in general medicine and surgery. In view of this, the admission of undergraduate students will have to cease in the near future, and it is impossible to consider any further applications from such students at the moment. In due course the school will join the British Postgraduate Federation, which has been instituted by the University of London.

The London County Council, in its general hospital service, follows the practice of employing senior medical students during their periods of vacation and allowing them free board and lodging in return for their services. This privilege has lately been extended to the mental health services, and the medical officer of health has been authorized to arrange, where practicable, for approved medical students to be attached to hospitals and institutions of the mental health services without remuneration, but with free board and lodging if required, the normal period of attachment to be not more than six weeks and not more than two students to be attached to any one institution at any one time.

Oxford and Cambridge

The entry of students from school into Oxford University is restricted by decree; the number to be admitted to the Medical School in the academic year 1947–8 has been fixed at 55 men and 10 women. Holders of certain scholarships and exhibitions are approved for this purpose and Rhodes scholars are accepted automatically. As for other candidates, the names of male medical students are put forward by the college, hall, or society to which the student seeks admission for consideration by a selection committee set up by the University for the purpose. Preliminary inquiries should therefore be addressed to the head of a society, not to the dean of the Medical School. There are 22 men's societies in Oxford, each attached to a particular college, with the master, or principal, or provost, as the case may be, at the head, together with one non-collegiate society. Female students are selected by the five women's societies attached to the three women's colleges and Lady Margaret Hall, with one non-collegiate society; these act together to choose the most suitable candidates. In view of the various Ministry of Labour regulations about deferment and of the fact that it may be necessary to pass a college entrance examination before acceptance, any prospective student coming straight from school (that is to say, any except an ex-Service student) is strongly advised to make application for admission to a society well in advance of his or her eighteenth birthday. All the societies provisionally accept prospective medical students. It should be added that the acceptance of ex-Service men and women is not limited by the decree above mentioned. The acceptance of foreign students for the time being is limited by reason of the pressure on accommodation of colleges and laboratories.

Students without war service matriculating after the end of Trinity term, 1946, will no longer qualify for the B.A. degree by passing the first B.M. examination (organic chemistry, anatomy, and physiology), but will be required to take the second public examination, the course for which is normally taken by medical students is the Final Honour School of Animal Physiology. Students with not less than eight months' approved war service who matriculate before the end of Trinity term, 1948, can qualify for the B.A. degree by passing the first B.M. examination, and hence do not require to reach the higher standard in the preliminary examinations in physics and chemistry, which is essential for entry into the Final Honour School.

It has been decided that the Clinical School shall become a permanent feature at Oxford, so that students may qualify either at Radcliffe Infirmary or by transference to a London or other teaching hospital. The clinical administrative and social centre is being established in Osler House, which is adjacent to the Radcliffe Infirmary.

At Cambridge in the new academic year the pre-clinical Medical School will be filled to capacity. The Medical School at Cambridge is based upon the existing University departments and Addenbrooke's Hospital. Members of the staff of Addenbrooke's have become recognized teachers in the University, while the University has assumed the responsibility for the pathological and biochemical services of the hospital and has appointed University officers to carry out the work under the direction of the professor of pathology. The University has taken the further step of linking the public health laboratory service to the Department of Pathology by appointing the two senior members of the staff of that department to University posts. Some of the difficulties of accommodation are in process of being temporarily overcome by the erection of huts on the Downing site.

These new developments are all part of the long-term University plan, begun a few years ago with the formation of departments of experimental medicine and of radiotherapeutics. The consolidation and reorganization of the pathological services provides the basis for the evolution of the new departments contained in the five-year plan for the Medical School. This year the University will launch its Department of Human Oecology, which will include a service for the supervision of the health of undergraduates and those engaged in hazardous laboratory work, as well as a subdepartment of epidemiology and a statistical service. In principle a new department should begin each year, provided premises are available. Departments of paediatrics, thoracic surgery, orthopaedic surgery, and haematology are contemplated. It is hoped that during the quinquennium the building of a new Addenbrooke's Hospital on an appropriate site will be well in hand, thus providing ample accommodation for hospital services and University departments alike, as well as permitting serious contemplation of a full undergraduate medical school, in addition to the postgraduate plans which are now being pursued.

English Provincial and Welsh Schools

The expected entry of students this year at the Medical School, Hospitals Centre, Birmingham, is 110, which is also the limit on admissions. The only priorities in student admissions are for ex-Service persons (90%). The curriculum now includes an introductory course, and neurology and tuberculosis are new subjects. Long-term development is the completion of the main building. All house appointments at the teaching hospital are available for students on graduation before doing their military service.

At Liverpool the limit of admissions is 100, and the entry this year as last will be to the maximum; 70 will enter first year (pre-medical) and 30 the second year. Liverpool has four general teaching hospitals, and to obviate waste of time in travelling the students in their clinical years (fourth to sixth) will in future have all lectures at the University concentrated in two mornings of each week. After setting aside the women's entry and commitments to the Colonial Office, up to 90% of remaining places are reserved for suitable ex-Forces candidates, local claims having preference. A considerable amount of midwifery and some elementary clinical medicine and surgery are taught in corporation hospitals. A big long-term plan centres on the building of a single general teaching hospital. Short-term plans include the introduction of Hons. B.Sc. in physiology and biochemistry, starting this year, and the establishment of a full-time department of anaesthetics.

The entry at Leeds for the first M.B. is up to the full limit of 75. The main teaching is done in the General Infirmary at Leeds, a voluntary hospital, but there is affiliation for teaching purposes with Leeds municipal hospitals. As with any teaching school, most of the junior appointments are filled by the school's own graduates, but facilities do exist for others. The D.P.H. course at Leeds is running again, and the D.P.M. may be running next session.

The Medical School at Manchester takes 96 students as a maximum. Long-term plans at Manchester include the building of a new medical school and library to house the rapidly expanding pre-clinical departments and some of the clinical departments as well.

Sheffield has 52 medical and 8 dental students entering for their first year and 20 medical for their second. The limit of first-year entry is 40 medical and 20 dental students, and for the second year the number entering is limited to make total classes of 60. Up to 90% of places are available for ex-Service candidates, but it is not anticipated that such a high percentage of suitable applicants will be received. The teaching hospitals are the Royal Sheffield Infirmary and Hospital (including the Edgar Allen Institute), the Jessop Hospital for Women, and the Children's Hospital; and local authority hospitals for tuberculosis and infectious diseases and the West Riding Mental Hospital are affiliated. A new Medical School has been planned at Sheffield to allow for an annual entry of up to 100 medical and 50 dental students each year. A department of social medicine is to be developed and student health service organized.

Bristol has an entry of 60, the maximum intake. Here a transitional period of study, including an introductory clinical course, is being introduced. During the coming session this will be of three months' duration. The examination in elementary pathology and elementary pharmacology (section II of second M.B.) will probably be abolished. The minimum period for clinical studies is expected to be reduced from 36 to 33 months, and it is proposed to extend the period of paediatric clerking from one to three months. A full-time professor of child health has recently been appointed. The local municipal general hospital, Southmead, is used considerably for teaching purposes; all obstetrical instruction is carried out there, also an appreciable part of the teaching in medicine and surgery. The city hospitals for infectious diseases and mental diseases have also been used for teaching purposes for many years.

The Medical School of King's College, Newcastle-upon-Tyne (University of Durham), will have approximately 65 first-year admissions. Second-year admissions will be about 25, bringing the total number for the year to about 90. The number of applicants considered for admission has been approximately four times the number of vacancies. The recently established Department of Industrial Health at Durham University has begun to take a full part in clinical teaching. A new Department in Anaesthesia has recently been established. The teaching hospital remains the Royal Victoria Infirmary, but close relations are maintained with the Newcastle General Hospital (the municipal hospital). At present students attend only on a very limited scale at the General Hospital, which is, however, used considerably for postgraduate teaching.

The Welsh National School of Medicine at Cardiff, a constituent college of the University of Wales, is again in full use, with the teaching staff at normal strength, and is prepared to accept the entry of 50 students to begin their clinical work, the maximum it is possible to admit to clinical studies under present conditions. The new entry of pre-clinical students is expected to be at least 50, and if it is possible to obtain the necessary additional staff this number will be increased to 65. Apart from the automatic readmission of students of the University of Wales to continue their medical courses, first priority for other candidates is given to ex-Service men and women. Instruction in pre-clinical subjects is available in each of the constituent colleges of the University (Aberystwyth, Bangor, Swansea, and Cardiff), but in practice

most of the students enter Cardiff College. The Royal Infirmary is the main teaching hospital, but the school uses also Llandough Hospital and the City Lodge Hospital of Cardiff Corporation. The school authorities have submitted a scheme for a long-term policy. The architect has been appointed and the draft plans prepared for a scheme which envisages a University medical teaching centre, comprising adequate accommodation for each department of the medical school, a teaching hospital of not less than 1,000 beds, and appropriate recreational facilities for students and staff on a site of about 70 to 80 acres. It is hoped that such a site will be found in Cardiff. As a short-term policy the Ministry of Health has approved the provision of additional beds for the Cardiff Royal Infirmary to be erected in the grounds of the corporation hospital at Llandough. It is hoped that this extension will proceed quite rapidly, and with it the teaching facilities for medical students will be much improved.

Scottish Schools

In the Faculty of Medicine of the University of Edinburgh all the available places for undergraduate students are occupied. The selection of students to be admitted for the first year of the medical course in October, 1947, has been made, and approximately 200 new students have been accepted; 200 first-year students is the maximum that can be taken under present conditions. Since the end of the war there have been increases in staff in many of the departments, and there is sufficient staff now to carry out all the duties in the accommodation at present available. Pre-medical education is carried on in the school. During the first year of the medical course the basic sciences of physics, chemistry, botany, and zoology are studied, and in addition the students attend courses in anatomy. The Royal Infirmary is the main teaching hospital, but facilities for clinical instruction are available at the municipal hospitals, the City Fever Hospital, the Royal Hospital for Sick Children, the Princess Margaret Rose Hospital (orthopaedics), and the Royal Edinburgh Hospital for Mental Disorders.

At Glasgow University the normal entry of medical students is 180, but has been increased this year to 240 in view of amalgamation with the Anderson College of Medicine and St. Mungo's College. It is hoped that the amalgamation arrangements with the Anderson College will be completed by Oct. 1. The University has agreed to increase its annual intake of medical and dental students so as to provide for those who would ordinarily have been admitted to Anderson, and such students will read for the M.B., Ch.B. or dental degree subject to the same terms and conditions as apply to present University students. Existing students of the Anderson College will be given facilities to continue their studies for the Scottish Conjoint diploma under the regulations which were in force at the date of their entry to the College. Those who can show a good progress record will be given the option of transferring to the M.B., Ch.B. degree and will be allowed to count examinations already passed up to and including the third professional. It is anticipated that the University will specify a minimum period of study under their own regulations before the privilege of sitting the final examination is granted. St. Mungo's College, which is the Medical School to the Royal Infirmary, and has been an independent entity since its foundation, has now been amalgamated with Glasgow University, and applications for admission should in future be made through the usual University channels.

The entry of students at Aberdeen is 92. In student admissions preference is given, other things being equal, to students from the University area and sons and daughters of graduates. All hospitals in Aberdeen are used as teaching hospitals. At present, in accordance with the recommendations of the G.M.C., final-year students reside on the hospital site for four months; plans are being made to increase the accommodation so that final-year students will reside on the hospital site for the full year. New chairs have been founded in child health and in biological chemistry, and appointments to these will be made in the course of the next twelve months.

The University of St. Andrews has an expected entry of between 75 and 80 students at the Medical School, Dundee. The limit of entry is conditioned by the clinical material available. First priority is given to ex-Service applicants, other things being equal; thereafter priority in respect of competitive examinations for bursaries, scholarships, etc. On the average at Dundee over several years the sex ratio has been two male students to one female student. New subjects to be introduced into the curriculum include medical psychology, and greater stress will be laid on paediatrics and public health and social medicine. The G.M.C. recommendations have been adopted and will be introduced in October, 1948. The hospitals of the area, including the municipal hospital and also the Perth Royal Infirmary, are affiliated to this school.

Irish Schools

The Medical School of Queen's University, Belfast, is in full use and the teaching staff has returned to normal strength. The number of students entering is limited to 112 for the coming session, but if the number of ex-Service men applying is large there is power to increase the limit to 130. Priorities for admission are (1) residence in Northern Ireland, (2) sons and daughters of former Queen's graduates, (3) residence in Great Britain, (4) residence in British Commonwealth. A certain number of places are reserved for British colonial students and for a few American ex-Service men, but the highest priority at the moment is for ex-Service men normally resident in Northern Ireland. Applicants for the present year are about four times the number of permitted entry. Ex-Service students have also the opportunity of doing additional work during the summer vacation by way of special courses, to allow them to catch up on their studies. Most of the examinations in the University are in grouped subjects, and the normal practice is that a student must pass in the whole of one group. In the case of ex-Service candidates, however, passes in individual subjects are permitted. Pre-medical education is carried on in the school, and the school authorities do not favour this year being spent at secondary schools.

The Faculty is fortunate in being affiliated for teaching purposes to the Royal Victoria Hospital, the Mater Hospital, the Belfast City Hospital, and to all the hospitals in Belfast which deal with special cases. In this way a very large number of beds are available for students, and the relationship between the University and the teaching hospitals has always allowed the full development of such a liaison. Queen's has recently decided to rebuild its clinical school on the Grosvenor Road site, in close relationship to the Royal Victoria Hospital. In this way an even closer liaison between hospital and University will be established, and with the appointment of full-time professors of medicine and surgery a greatly improved scheme for teaching will soon be developed. It is hoped that at least temporary buildings will be available within the next academic year on ground kindly granted to the University by the hospital. A visit from the University Grants Committee is expected in 1948, after which it is hoped that many new developments will be encouraged financially.

At the University of Dublin School of Physic, Trinity College, the limit of entry is 150 pre-medical students, from whom about 95% will be selected for the first medical year. Innovations and new subjects will be introduced on the institution of the new curriculum, modified in accordance with the G.M.C. recommendations. Priority is given to the children of graduates of the University. A number of places are allocated to ex-Service students, and the Ministry of Education grants for further education are tenable in this school. There is no conscription in Eire. It is presumed that British students will be exempt during their period of training at Trinity. Pre-medical courses are given in the school, and no exemption is accorded in consideration of similar courses taken elsewhere. The school has no control over any Dublin hospital, but instruction given at each of the ten Dublin clinical hospitals is recognized by the Board of Trinity College. Reciprocity exists between these ten hospitals, so that a student of the school who has paid his fee to one hospital is entitled to attend courses in any of the ten. It is hoped to establish a department of social medicine in the near future.

The University Colleges of Dublin, Cork, and Galway are constituent colleges of the National University of Ireland, whose degrees of M.D. and M.B., B.Ch., admit to the *Register*, with supplementary qualifications in medicine, surgery, and midwifery. Work in the schools is proceeding as usual.

POSTGRADUATE TRAINING

FACILITIES IN LONDON

Facilities for postgraduate education in this country were for many years of a sporadic character. Lately, however, thanks to the establishment of the British Postgraduate Medical Federation—which is a school of the University of London, and is directed by Sir Francis R. Fraser from the central office, 2, Gordon Square, W.C.1—a coherent plan for the provision of advanced education and research has been presented. In London now a graduate who has chosen a specialty and wishes to continue his specialist training can be helped with advice and information not only concerning postgraduate activities in London but in all the other university centres in Great Britain. At the Postgraduate Medical School of London, which is in association with the Hammersmith Hospital (L.C.C.), advanced instruction in general medicine, general surgery, obstetrics and gynaecology, and pathology is provided. In addition a number of special institutes have been organized, some of them already fully functioning, while others are at various stages of development and able to provide training for limited numbers. The institutes and their associated hospitals are as follows:

Institute	*Associated Hospitals*
Child Health ..	Hospital for Sick Children, Great Ormond Street; Queen Elizabeth Hospital for Children, Hackney.
Neurology	National Hospital for Nervous Diseases, Queen Square.
Oto-laryngology ..	Royal National Throat, Nose, and Ear Hospital, Gray's Inn Road, and Golden Square.
Ophthalmology ..	The Moorfields Group (Royal London Ophthalmic, Royal Westminster Ophthalmic, Central London Ophthalmic Hospitals).
Psychiatry	Medical School of Maudsley Hospital.
Orthopaedic Surgery	Medical School of Royal National Orthopaedic Hospital.
Urology	Combined School of St. Peter's and St. Paul's Hospitals.
Diseases of the Chest	Medical School of Brompton Hospital.
Dermatology	Medical School of St. John's Hospital for Diseases of the Skin.
Cardiology ..	Medical School of the National Heart Hospital, Westmoreland Street, W.1.

The Hammersmith School

The Postgraduate Medical School of London has been a school of the University of London since 1935. Increasing demands for postgraduate education from the Dominions, Colonies, and foreign countries have made it necessary to expand the clinical facilities at the school, and satisfactory arrangements have been made with the London and Middlesex Council Councils for the use of additional medical and surgical units in their hospitals for clinical training. The students of these clinical units attend the school for didactic teaching one day a week.

In the clinical departments bedside teaching is given, reinforced with lectures, conferences, demonstrations, and attendance at operations. The full programme of organized teaching is carried on in ten-week periods, corresponding to London University terms. During vacations the staff are engaged in research work and the higher education of selected students. At present there are no vacancies for short-term students until April, 1948, except in the department of surgery, which is expanding its size. House appointments are usually made from among students, and facilities are provided for senior students who wish to carry out original research under the director.

The Department of Medicine is organized in five clinical units—three at Hammersmith and two at auxiliary hospitals. About 90 students can be accommodated, and resident appointments are available for about 20. In the Department of Surgery, which provides training for general surgeons but gives instruction also in orthopaedics, oto-laryngology, and urology, teaching is so organized as to be continued from out-patient departments through the wards and operating theatres to follow-up clinics. Students do not themselves perform operations. There are at present no facilities for work in preparation for the primary F.R.C.S. examination. Teaching in the Department of Obstetrics and Gynaecology is conducted in the antenatal and postnatal clinics and in the sterility clinic as well as in the wards and operating theatres. The Department of Pathology is organized in four main sections: (1) morbid anatomy and histology; (2) bacteriology; (3) haematology and clinical pathology; and (4) biochemistry. Instruction is adapted to the requirements of the course for the diploma in clinical pathology of the University of London, which lasts for one year, starting in October. It is hoped that in future there will be twenty places available in this course instead of ten as hitherto. Selection for these places is made in June. Fortnightly courses in practical anaesthetics are also given. In the Department of Radiology teaching is based on the requirements for the D.M.R. Temporary huts providing additional accommodation for clinical departments and for the amenities of students have now been completed.

The Specialist Institutes

The Institute of Child Health includes in its programme every aspect of child health, including the newborn, and provides tuition throughout the year in three terms of three months each, with a series of lectures by specialists and experts. The teaching is mainly by attendance on the hospital practice, which is continuous. This last is also true of the Institute of Neurology, with three terms annually. More advanced students are appointed as clerks in the wards or attached to special departments. The Institute of Oto-laryngology holds two comprehensive 20-week courses annually, covering the whole field of the specialty. The courses consist of lectures, demonstrations, and attendance on the practice of the hospital, with facilities for dissection. In the Ophthalmic Institute, in addition to teaching by means of hospital practice, a course lasting four to five months is held twice a year, in March and October.

In the Institute of Psychiatry the present "short course" will be the last of its kind. The future training in psychiatry is seen as a long-term training covering two or three years. In the Institute of Orthopaedic Surgery a first course has recently been held of three months' duration, consisting of some 100 lectures or lecture-demonstrations. Future courses are expected to be of six months. The Institute of Urology holds three courses of 14 weeks' duration annually, including systematic lectures, out-patient sessions, ward visits, and operations. In the Institute of Diseases of the Chest the teaching is primarily by means of attendance on hospital practice, students enrolling for three months or more on what is at present approximately a half-time course of instruction consisting of clinical work in the wards and the out-patient departments and a certain number of lectures and demonstrations. Clinical teaching in the Institute of Dermatology takes place in the out-patient department twice daily, and there are facilities for study in the pathological laboratory, but no ward instruction yet. The Institute of Cardiology holds three intensive courses of lectures and demonstrations, each lasting a fortnight, in February, July, and November; but its aim is to train cardiological specialists, and physicians in training as cardiologists are expected to attend whole-time for one year at least.

In all these institutes considerable expansion is planned as soon as the trained staff and accommodation become available. At present facilities are limited by the difficulties of building, the heavy demand on existing places by medical officers demobilized from the Forces, and the six years' accumulation of graduates from abroad. Established specialists from overseas who wish to see something of the practice of this country and are here for a relatively short time are always welcome. The work at the Institutes is of an advanced type and sufficient to enable graduates who have had adequate practical experience to prepare for the higher degrees or diplomas.

Facilities Elsewhere in Great Britain

It would be a great mistake to assume that facilities for postgraduate instruction are confined to London. At many provincial and Scottish Universities highly organized and

continuous postgraduate courses are provided. This is specially true of Oxford, Cambridge, Bristol, Manchester, Liverpool, Birmingham, Cardiff, Edinburgh, and Glasgow. Some attempt has been made in the following table to set out the courses available; it is almost certainly not complete:

Subject	University	Type	Duration	Starts
Anaesthetics	Bristol	Full-time	2 weeks	April and Oct.
	Oxford	,,	2 ,,	Mar. and Sept.
	,,	Part-time	1 week	June and Dec.
Bacteriology	Manchester	Full-time	9 months	Oct.
Industrial health	Birmingham	,,	4 weeks	Each term
	Glasgow	,,	9 months	Oct.
	Edinburgh	,,	9 ,,	,,
	Manchester	,,	9 ,,	,,
Medicine (general)	Edinburgh	,,	11 weeks	Jan., April, Oct.
	Glasgow	,,	8 ,,	April and Oct.
Neurology	Birmingham	Part-time	2 months	During term
Obstetrics and gynaecology	Glasgow	Full-time	3 weeks	May and Nov.
Ophthalmology	Oxford	,,	8 ,,	April and Oct.
Orthopaedic surgery	Liverpool	,,	15 months	Oct.
Physical medicine	Bristol	,,	5 ,,	Sept.
Psychiatry	,,	,,	10 weeks	,,
	Edinburgh	,,	2 terms	Oct.
	Leeds	,,	3 ,,	,,
	Manchester	,,	9 months	,,
Public health	Aberdeen	,,	9 ,,	,,
	Birmingham	,,	9 ,,	,,
	Bristol	,,	9 ,,	,,
	Durham	,,	9 ,,	,,
	Edinburgh	,,	9 ,,	,,
	Glasgow	,,	9 ,,	,,
	Leeds	,,	9 ,,	,,
	Liverpool	,,	9 ,,	,,
	Manchester	,,	9 ,,	,,
	Wales	,,	3 ,,	,,
	,,	Part-time	12 ,,	Jan.
Radiodiagnosis	Birmingham	Full-time	18 ,,	Oct. (alt. yrs.)
	Bristol	,,	18 ,,	Oct.
	Edinburgh	,,	18 ,,	,,
	Liverpool	,,	18 ,,	,,
	Manchester	,,	18 ,,	April
	Sheffield	,,	18 ,,	Oct.
	Wales	,,	18 ,,	,,
Radiotherapy	Bristol	,,	2 years	,,
	Birmingham	,,	2 ,,	,, (alt. yrs.)
	Edinburgh	,,	2 ,,	,,
	Liverpool	,,	2 ,,	,,
	Manchester	,,	2 ,,	April
	Sheffield	,,	2 ,,	Oct.
Surgery (general)	Edinburgh	,,	5 months	Mar. and Oct.
	Glasgow	,,	8 weeks	April and Oct.
	Liverpool	,,	9 months	Oct.
Tropical medicine	Edinburgh	,,	2 terms	Oct.
	Liverpool	,,	4 months	Jan. and Sept.
Tuberculosis	Wales	,,	6 ,,	Jan.

To this comprehensive list a few details may be added. The Oxford Medical School continues to offer facilities for postgraduate research in the pre-clinical and clinical departments, and members of the University can qualify for the postgraduate research degrees of Bachelor of Science and Doctor of Philosophy after carrying out a course of approved study and research under the supervision of the Board of the Faculty of Medicine. At Cambridge during the past year the University School of Postgraduate Teaching and Clinical Research has been officially inaugurated. At Bristol, in addition to the special postgraduate courses for the University's diplomas in radiotherapy, radiodiagnosis, public health, and psychological medicine, there is an unofficial course for the Final F.R.C.S., and candidates for the Primary F.R.C.S. are given assistance. A course is provided for the diploma in physical medicine of the Royal Colleges, and it is proposed in addition to give this autumn a short course for the Colleges' diploma in anaesthetics.

At Liverpool fourteen Fellowships are awarded annually, each of the value of not less than £350, tenable for one year, but renewable for a second year on the recommendation of the head of the department concerned. They are whole-time research appointments, but may include a limited amount of teaching or demonstrating. Appointment to the Fellowships normally begins with the October session, but applications must be made to the Dean by the end of June. The subjects covered by the Fellowships include gynaecology, bacteriology, anatomy, pathology, physiology, orthopaedic surgery, tuberculosis, and others. The Welsh National School of Medicine has four postgraduate research scholarships available—in tuberculosis, cancer, medical pathology, and midwifery, of the value of £250, £200, £150, and £150 respectively. Aberdeen also has several valuable postgraduate scholarships.

At Edinburgh large numbers of graduates have attended courses on internal medicine and surgery under the auspices of the Postgraduate Board for Medicine. Two weeks' refresher courses have also been provided at frequent intervals for general practitioners. At Manchester the Dean of Postgraduate Studies administers a scheme, and Manchester has courses in preparation for the D.P.H. and D.P.M. At Sheffield clinical facilities are available in various departments, many posts being at present filled by demobilized officers under the Ministry of Health scheme. A limited number of research appointments in the medical science and clinical departments are also available. At Leeds, as in other Universities, the scheme for postgraduate training of demobilized medical officers is being operated. Here, too, the preparation for the D.P.H., as in other universities, is again running.

Queen's University, Belfast, awards postgraduate degrees in medicine, surgery, and obstetrics, also honours science degrees in pathology, bacteriology, and other subjects. Following the end of the war there has been a great influx of ex-Service candidates for postgraduate degrees, many of them working for the M.D. Special courses in pathology, medicine, and diseases of children are given throughout the year with a view to these examinations. In close association with the postgraduate teaching there are at the moment fifty registrarships in the various aspects of medicine and surgery available for demobilized medical officers, and at the moment all of these are filled.

Refresher Courses for Insurance Practitioners

Postgraduate study courses for general practitioners, which were suspended during the war years, were resumed in 1946. The courses are arranged by the British Postgraduate Medical Federation in conjunction with the Universities, and the Ministry of Health is prepared to provide financial assistance to insurance practitioners in respect of their attendance at specially arranged courses. The conditions governing grant to insurance practitioners are:

(1) That at least three years have elapsed since the date of the applicant's first registrable qualification.

(2) That the applicant has not less than 300 (or in the case of a rural practice 150) insured persons on his list, or on his combined lists if he is under contract with more than one Insurance Committee.

(3) That the applicant attends not more than either one two-weeks course consisting of 22 half-day sessions or two one-week courses consisting each of eleven half-day sessions or the part-time equivalent.

The first course for which grant was approved was held at the West Middlesex County Hospital, beginning on Nov. 11, 1946. Since that date 202 applications from insurance practitioners have been approved, of which 16 were cancelled either by the applicants or because there were insufficient applications for a particular course. These applications under the Ministry of Health scheme were in respect of practitioners resident in England for courses arranged by English and Scottish Universities, but a few applications from practitioners resident in Scotland and Wales for attendance at hospitals in England have been approved. Since the resumption grant has been approved by the Ministry of Health in respect of 42 courses covering general medicine, surgery, obstetrics and gynaecology, and special subjects. These details do not include courses arranged in Wales and in Scotland for practitioners resident in those countries. At the Welsh National School of Medicine, Cardiff, postgraduate courses extending over two weeks have been provided for insurance and other practitioners, and similar arrangements have been made in Scotland.

The Royal Colleges

In any catalogue of postgraduate teaching facilities the contribution of the Royal Colleges must never be overlooked.

The lectures given at the Royal College of Physicians of London, including the Croonian, FitzPatrick, Oliver-Sharpey, Milroy, Goulstonian, Lumleian, Humphry Davy Rolleston, and other series, must not be omitted in any assessment of postgraduate facilities in London. Fellows, members, and licentiates of the Royal College who are fortunate enough to be able to attend them gain a surprising amount of knowledge of special subjects in medicine.

The Royal College of Surgeons of England has arranged a programme of postgraduate teaching for 1947–8 which includes

two courses each of twelve lectures on surgery, three courses each of twelve lectures on anaesthesia, two courses each of twelve lectures on oto-laryngology, two courses each of twelve lectures on ophthalmology, two courses each of twelve lectures on orthopaedics, 40 lectures in the autumn on anatomy, applied physiology, and pathology, and 72 lectures on these subjects in the spring. In addition to the lectures, practical demonstrations extending over a period of three months are also held. The College grants many research scholarships and prizes, and in certain cases makes grants in aid of surgical research, the work being carried out either in the College or elsewhere. In addition original work is presented through the medium of the Hunterian and Arris and Gale and a number of commemorative lectures.

The Fellowship of Postgraduate Medicine (1, Wimpole Street, W.1) has a bureau which provides general information on post-graduate work and arranges at various hospitals certain courses of instruction which may be classed under the heading of (1) week-end courses occupying the whole of Saturday and Sunday, for general practitioners, given in general and special hospitals; and (2) short courses for candidates for the M.R.C.P. and F.R.C.S. Twice a year revision courses in anaesthetics are arranged in Oxford and in London.

The National Association for the Prevention of Tuberculosis (Tavistock House, W.C.1) arranges lecture courses in London and other centres with demonstrations of clinical methods in the treatment of tuberculosis and discussion of results.

EXAMINATIONS AND REGISTRATION

Registration of Students

By regulation of the General Medical Council every candidate for registration as a student must produce evidence that he has attained the age of 17. The minimum standard of general education required is that of university matriculation or entrance examination in the faculties of arts or pure science. Every applicant is required to have passed an approved examination in general education, and, in addition, an examination in elementary physics or chemistry conducted or recognized by one of the licensing bodies. A student who has diligently attended an approved course of instruction in elementary biology at a secondary school or other teaching institution recognized by a licensing body may be admitted to the professional examination in elementary biology immediately after his registration as a student.

The certificate presented by the student must bear evidence that he has passed in English, a language other than English, elementary mathematics, and an additional subject or subjects, such as history, geography, physical science, dynamics, natural science, Latin, Greek, Hebrew, French, German, or other language accepted by the university for the purpose. Subject to this condition, the Council recognizes responsions of Oxford University, the previous examination of Cambridge, and the matriculation examinations of the other universities of England and the University of Wales, the preliminary examinations of the Scottish universities, the entrance examination to the School of Physic of the University of Dublin, the matriculation examinations of the National University of Ireland, the Queen's University of Belfast, and the Irish Royal Colleges of Physicians and Surgeons, and all examinations accepted by one or more of these universities or bodies as equivalent, for the purpose of entrance or matriculation, to their examinations. These include, for example, the higher school and the school certificate examinations of the Oxford Delegacy for local examinations, the Cambridge Local Examinations and Lectures Syndicate, Bristol, Durham, and other universities, and the Central Welsh Examination Board, and the leaving certificate examination of the Scottish Education Department. The Council will also recognize all examinations of Colonial universities similarly accepted by one or more of the British universities for the purposes of matriculation. The final examinations for degrees in art and science of any university of the United Kingdom or of the British Dominions are also recognized.

Every person who desires to be registered as a medical student should apply to the dean of the medical school which he is attending within fifteen days of the commencement of study, and produce evidence that he has reached the age of 17 and that he has passed the preliminary examination in general education and the examination in elementary physics and chemistry.

Qualifying Examinations

The English Conjoint

The Examining Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England (Examination Hall, Queen Square, London, W.C.1) examines candidates for the qualifying diplomas of L.R.C.P., M.R.C.S. Copies of the latest emergency regulations, issued in March, 1947, may be obtained from the Secretary.

In addition to the preliminary examination in general education, three examinations have to be passed: a pre-medical examination; a first examination in anatomy, physiology, pharmacology, and materia medica; and a final examination in pathology and bacteriology, medicine, surgery, midwifery, and gynaecology. Candidates are required to complete the medical curriculum extending over not less than 54 months of study at recognized medical schools and hospitals, and to pass the professional examinations in accordance with the regulations after passing any two parts of the pre-medical examination. The Board does not itself conduct the preliminary examination in general education, but recognizes a number of matriculation examinations and school-leaving certificates. The examinations of the Board are conducted four times a year, and candidates are required to give notice to the secretary of the Board twenty-one days before the examination. The subjects of the pre-medical examination are chemistry, physics, and biology, including elements of genetics. The first medical examination is in two parts: (1) anatomy and physiology, written, oral, and practical; and (2) pharmacology and materia medica (oral only). In the final examination, medicine, surgery, and midwifery and gynaecology are written, clinical, practical, and oral; pathology is written and oral only, and may not be taken alone as the last part of the examination.

Candidates who produce evidence of not less than twenty-four months' recognized clinical study subsequent to passing in anatomy and physiology are admissible to any one part only of the examination; on the completion of twenty-seven months' study they are admissible to one or two further parts, or to three parts if presenting themselves for the first time. Candidates may not enter for the last part of the examination until they have completed thirty months' clinical study.

Before admission to the final examination candidates must show that they are at least 21 years of age and must produce evidence (1) of having attended certain specified courses at a recognized medical school and hospital; (2) of general out-patient and in-patient attendance at a hospital during thirty months, six months' medical clinical clerkship, six months' surgical dressership, and three months' gynaecological clerkship; (3) of attendance at five labours by a teacher or member of the staff of an approved hospital and of having subsequently conducted fifteen other labours; (4) of having received instruction in children's diseases and the care of infants, and in the eye, throat, nose, and ear, and skin departments of general hospitals or at special hospitals; (5) of having received instruction in venereal diseases, radiology, and vaccination, and of having attended courses, including clinical demonstrations, at a fever and at a mental hospital.

The Scottish and the Irish Conjoint

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow have an arrangement whereby the student may obtain after one series of examinations the diplomas of all three bodies (L.R.C.P., L.R.C.S.Ed., L.R.F.P.&S.Glas.). Each of these corporations grants its single diploma after examination, but such single diploma does not confer the right to registration, except as a qualification additional to those already on the *Register*. The course of professional study after registration as a medical student embraces a period of certified study during not less than five academic years, in the last three years of which clinical subjects shall be studied.

The first examination embraces physics, chemistry, and biology; the second, anatomy and embryology, and physiology, biochemistry, and biophysics; the third, pathology, materia medica, and pharmacology. The final examination consists of two parts: the first part forensic medicine and public health, and the second part medicine, surgery, and obstetrics and gynaecology. All candidates for the triple qualification, on appearing for the final examination conducted by the Board, must produce certificates for registration as medical students and certificates of efficiency in the practice of vaccination from a Government teacher in the United Kingdom. Candidates for the examination of the Scottish Conjoint may work at any of the medical schools of Great Britain and Ireland. Details may be obtained from the registrar, 18, Nicholson Street, Edinburgh, 8.

The Conjoint Board of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland issues a joint licence in medicine, surgery, and midwifery (L.R.C.P.I.&L.M., L.R.C.S.I.&L.M.), and accepts candidates from most of the medical schools at home and overseas. The regulations can be obtained from the secretary of the Conjoint Board in Ireland, Royal College of Surgeons, St. Stephen's Green, Dublin.

University Degrees

All the universities offer qualifying bachelor degrees in medicine and surgery, conferred on the results of examination. The abbreviations are the B.M., B.Ch. of Oxford, the M.B., B.Chir. of Cambridge, the M.B., B.S. of Durham and London, the M.B., Ch.B. of the other English and Scottish universities, and the M.B., B.Ch. of the University of Wales, Queen's University, Belfast, and the National University of Ireland. The baccalaureate in medicine and in surgery and the licence in medicine and in surgery of the University of Dublin both admit primarily to the *Register*. All the universities also confer on graduates holding a bachelor's degree the higher qualification of Doctor of Medicine or Master of Surgery. The degree of Doctor of Surgery in addition to that of Master is offered at Durham. Liverpool offers the degree of Master of Orthopaedic Surgery (M.Ch.Orth.). The Irish universities offer the degree of Master of Obstetrics (M.A.O.). The requirements of the universities vary, and particulars should be obtained from the one selected.

Medical Corporations Acting Severally

The Society of Apothecaries of London grants the diploma of Licentiate in Medicine and Surgery (L.M.S.S.A.Lond.) to candidates who pass in the primary examination, which is held quarterly, and the final examination, which is held monthly, except in September. The minimum period of study is normally five years. Further information may be obtained from the registrar, Apothecaries' Hall, Black Friars Lane, London, E.C.4.

The Apothecaries' Hall of Ireland (95, Merrion Square, Dublin) grants the L.A.H.Dubl. to students who pass the three professional examinations.

Higher Qualifications at Royal Colleges

The Royal College of Physicians of London confers its Membership (M.R.C.P.) by examination. A candidate is required to give at least twenty-eight days' notice of his intention to present himself for examination and to transmit such medical and surgical qualifications as he may have obtained, together with a list of his public and other appointments, testimonials, etc. The pass examination for Membership consists of a written examination in the form of a paper on questions on medical anatomy, on pathology, and on the principles of medicine; a paper on questions on the practice of medicine, including the principles of public health, and on psychological medicine; a clinical examination in the clinical wards of a hospital, and oral examinations. Fellows of the College (F.R.C.P.Lond.) are elected annually at a general meeting. The address of the College is Pall Mall East, London, S.W.1.

The Royal College of Surgeons of England (Lincoln's Inn Fields, W.C.2) grants its Fellowship (F.R.C.S.Eng.) to those who pass its primary and final Fellowship examinations. The primary examination is held in April and October. The examination, which is partly written and partly oral, is in anatomy and applied physiology and the principles of pathology. The final examination, held in May and November, with surgery, including surgical anatomy and pathology, as its subject, is again partly written and partly oral, and includes the examination of patients and the performance of operations on the dead body. Candidates who have passed the primary examination are admissible to the final on production of evidence of having been engaged in the acquirement of professional knowledge for not less than two years subsequent to the date of obtaining their registrable qualification, and of having held for not less than six consecutive months a recognized resident post in charge of general surgical patients in the wards of a recognized general hospital.

The College has lately instituted the diploma of Fellow in Dental Surgery (F.D.S., R.C.S.Eng.). Candidates are required to pass a primary and final examination. The diploma is registrable in the *Dentists Register* as an additional qualification, provided that the name of the holder already appears in that *Register*.

Membership of the Royal College of Obstetricians and Gynaecologists (M.R.C.O.G.) may be applied for by medical graduates who have been registered or eligible for registration for at least three years. The Fellowship (F.R.C.O.G.) is granted to members who are considered to have advanced the science and art of obstetrics and gynaecology. The address of the College is 58, Queen Anne Street, London, W.1.

Any licentiate of a British or Irish College of Physicians or any graduate in medicine of a university may apply for election to Membership of the Royal College of Physicians of Edinburgh after the expiration of two years from the date of his original qualification. The examinations for the coming year begin on the first Friday of October, January, April, and July. Only a person who has been for at least three years a Member of the College can be elected to the Fellowship (F.R.C.P.Ed.). Every proposal for election to the Fellowship must be signed by four Fellows, and the motion for election is made at the quarterly meeting of Fellows. Particulars of the Membership examination may be obtained from the secretary of the College, 9, Queen Street, Edinburgh, 2.

Candidates for the Fellowship of the Royal College of Surgeons of Edinburgh are required to pass an examination on the principles and practice of surgery and on clinical surgery and on one optional subject. After having passed the examination the candidate is required to lodge with the clerk to the College a petition for election, which must be signed by two Fellows. The Royal College has lately instituted a higher dental diploma. The address of the College is Surgeons' Hall, 18, Nicholson Street, Edinburgh.

Fellowship registrable as an additional qualification is granted after examination by the Royal Faculty of Physicians and Surgeons of Glasgow (242, St. Vincent Street, C.2). The candidate must be a licentiate of the Faculty or a graduate of a university or medical college approved by the Faculty, and he may be examined either in medicine or in surgery.

The Royal College of Physicians of Ireland grants membership on the result of an examination and elects Fellows by ballot from among the Members. The address of the registrar is 6, Kildare Street, Dublin.

Recently the regulations of the Fellowship of the Royal College of Surgeons in Ireland (St. Stephen's Green, Dublin) have been revised so as to bring them more closely into line with those of the English College. Candidates for the diploma are required to pass two examinations—primary and final. The examinations are held in March, June, and November. The subjects of the primary examination are anatomy, including dissections, physiology and histology, and principles of pathology. The subject of the final examination is surgery, including surgical anatomy and pathology. A course for the primary Fellowship examination and a postgraduate course in surgery, lasting about eight weeks, are held twice a year.

The Society of Apothecaries of London conducts the examination of Master of Midwifery (M.M.S.A.), embracing antenatal care, midwifery, and infant welfare and their relation to hygiene and preventive medicine. The examination, which is written, oral, and clinical, is held in May and November.

Diplomas granted in British Possessions

Diplomas in medicine and surgery granted by the following universities or other bodies in British possessions are registrable in the Colonial List of the British *Medical Register*:

Universities of Sydney, Queensland, Adelaide, Melbourne
Ceylon Medical College
University of Hong Kong
Royal University of Malta
Newfoundland Medical Board
University of New Zealand
Universities of South Africa, Capetown, and the Witwatersrand
King Edward VII College of Medicine, Singapore

Under specified conditions the diplomas of colleges in Canada are registrable; also, with some exceptions, and subject to dating, the diplomas of the Universities of India and the University of Rangoon.

SPECIAL DIPLOMAS

Diploma in Public Health

The Diplomas in Public Health of the English and Scottish Conjoint Boards and of the various universities are registrable with the General Medical Council. The diploma is open, after a stipulated interval, to those who have passed the final qualifying examination. The preliminary and final examinations for the D.P.H. under the English Conjoint Board are normally conducted twice yearly—in June and December—and candidates must give notice to the secretary of the Examining Board, Examination Hall, Queen Square, London, W.C.1, twenty-one days before the examination begins, and must furnish the necessary certificates.

The course for the preliminary examination consists of systematic instruction in the history of public health and public assistance, the functions of central and local authorities, social security, the statistical presentation of public health data, causal agents of infection and their control, influence on health of heredity and environment, physical education, and the principles of education. The course must include practical demonstrations, exercises in epidemiological problems, and visits to places and institutions of importance in public health. The examination consists of two written papers and an oral session. Those who pass this examination receive the Certificate in Public Health, the possession of which makes them eligible to begin the course of study required for admission to the final examination. The final course includes systematic instruction in a large number of subjects, such as physiology and biochemistry; food and nutrition in relation to public health; bacteriology, parasitology, and medical entomology as applied to epidemiology; mass aspects of disease; sanitation; statistical methods and data; the law relating to public health; mental health services; and occupational health. Candidates are required to produce a certificate of having resided and received instruction for four weeks in an infectious diseases hospital or of having regularly attended at such a hospital for three months, also of having for not less than five months attended the health department of a local authority and personally studied the daily work of each section of such department under proper guidance. The examination consists of three written papers, a clinical examination in infectious diseases, an oral examination in that subject and in epidemiology and general and special hospital administration, and a general oral examination. The whole examination must be passed at one time. Candidates who pass this examination are granted the diploma.

D.P.H. courses, after wartime suspension, have been resumed at many universities. They are held at, among others, Liverpool, Leeds, Bristol, Birmingham, Manchester, Cardiff, and Aberdeen. At the Medical School, Newcastle-upon-Tyne, the course for the certificate and diploma is being revived in October.

The London School of Hygiene and Tropical Medicine (Keppel Street, W.C.1) furnishes courses for the D.P.H. The course is designed primarily for qualified medical practitioners who intend to enter the public health service in this country as medical officers of health. The course begins on Sept. 29 and lasts one academic year of nine months. Examination for the certificate is held at the end of three months. All the vacancies for the full course for the diploma have been filled and there is a waiting list. Applications for the course beginning in the autumn of 1948 will be considered early next year. In view of the development and subdivision of medical work in the public health service, some places in the course for the certificate have been reserved for practitioners who intend to engage in public health work other than as medical officers of health.

The London School also furnishes courses for the academic diploma in bacteriology. There are now no vacancies for this course, and applications for the subsequent session should reach the School by March, 1948, as the number of places is strictly limited. A short course lasting three months in the principles of medical statistics and statistical methods will start in January, 1948. Applications for admission should be made not less than one month before the course is due to begin.

The Royal Institute of Public Health and Hygiene (28, Portland Place, W.1) arranges courses of lectures and laboratory instruction by qualified teaching staff for the D.P.H. Students completing the course are entitled to enter for examinations for the diploma of the universities and corporations. Examinations for the certificate and diploma are held twice yearly in London and at provincial centres.

Diploma in Tropical Medicine and Hygiene

A course for the academic diploma in tropical medicine and hygiene (D.T.M.&H.Eng.) is furnished by the London School of Hygiene and Tropical Medicine. The course is designed to prepare qualified medical practitioners for the examination of the Conjoint Board for this diploma. It is open to any qualified medical practitioner, but students not holding a qualification registrable in England should consult the secretary of the Conjoint Board (8, Queen Square, W.C.1) regarding their admissibility. The first course during the next session starts on Sept. 29, and the second on March 1, 1948. The examinations that conclude these courses will be held in March and July respectively.

The Incorporated Liverpool School of Tropical Medicine is now on a normal peacetime footing. The two separate diplomas in tropical medicine and in tropical hygiene formerly offered are now combined to form a single Diploma in Tropical Medicine and Hygiene. Courses of instruction for this diploma are given twice yearly, and each lasts about four months. During 1947–8 these courses will start at the end of September and the beginning of March, respectively. They are open to postgraduate students only, of whom about 40 or 50 a term can be accommodated. Women students are accepted on the same terms as men. The address of the School is Pembroke Place, Liverpool.

Before admission to the examination for the diploma candidates are required to furnish certificates of possession of a qualification in medicine and surgery and to attend satisfactory courses of instruction in the university on tropical medicine and pathology and a number of related subjects. The examination consists of one paper on tropical medicine, one on pathology including bacteriology, one on parasitology, one on entomology, one on tropical hygiene, one on sanitary engineering, vital statistics, and chemistry; and practical and oral examinations in tropical medicine, parasitology, entomology, and tropical hygiene.

Diploma in Industrial Health

The Diploma in Industrial Health of the Royal College of Physicians of London and the Royal College of Surgeons of England (D.I.H., R.C.P.Lond.&R.C.S.Eng.) may be granted to those who possess a qualification registrable in the British *Register* and to graduates in medicine and surgery of those universities and medical colleges recognized by the Examining Board in England for the purpose. Candidates are admissible to Part I of the examination 24 months after having passed a final qualifying examination. Both parts of the examination are taken in June and December unless otherwise ordered. Exemption from Part I may be granted to candidates who hold a recognized certificate in public health. For admission to Part I candidates are required to produce a certificate of satis-

factory and regular attendance on a course extending over one academic term of not less than ten weeks of whole-time study, or an equivalent period extending over not less than five months of part-time study, covering in either case not less than 300 hours. For admission to Part II candidates are required to produce certificates that they have, subsequent to having passed Part I, attended satisfactorily and regularly, at an institution recognized by the Examination Board, a course extending over not less than five calendar months' whole-time study or an equivalent period extending over not less than twelve months of part-time study, covering in either case not less than 550 hours.

The Society of Apothecaries of London (Black Friars Lane, E.C.4) has instituted an examination in industrial health, embracing the history and legislation relating to the subject, occupational diseases, industrial environment, the practice of industrial medicine, and clinical medicine and surgery as applied to industry.

The Royal Institute of Public Health and Hygiene (28, Portland Place, W.1) arranges courses for the Diploma in Industrial Health. A course of instruction for Part I of the diploma will begin on Sept. 29 (this is the same as for the Certificate in Public Health). Those already holding that certificate can if they desire be accepted for the course for Part II, provided a sufficient number of enrolments is received on any one occasion. The course for Part II includes the history of the development of and the legislation relating to industrial health, the organization of a health service in industry, applied physiology and applied psychology in industry, placement of workers, industrial accidents, occupational diseases and disabilities, rehabilitation and resettlement in industry, and special problems relating to employment of women and young persons. Practical instruction includes visits to industrial establishments, rehabilitation and retraining centres, and works' surgeries, and attendance at a skin and an ophthalmic clinic and at the accident department of a hospital. The examination consists of two written papers of three hours each, a clinical examination, and an oral examination.

Other Special Diplomas

A large number of other special diplomas are available. The English Conjoint offers diplomas in laryngology and otology, in ophthalmic medicine and surgery, in anaesthetics, in child health, in physical medicine, and in medical radiotherapy and radiodiagnosis. The University of Oxford grants a diploma in ophthalmology. The University of London has a diploma in clinical pathology. Liverpool University has the degree of Master of Surgical Orthopaedics. The Conjoint Board in Ireland has diplomas in ophthalmic medicine and surgery, in anaesthetics, and in psychological medicine. The examination for the Diploma in Psychological Medicine covers in Part I the subjects of the anatomy and physiology of the nervous system and psychology, and, in Part II, neurology, including clinical and pathological neurology, and psychiatry or psychological medicine. The English "Conjoint" and several of the universities have diplomas in psychological medicine. A course for the D.P.M. is normally held at Maudsley Hospital, Denmark Hill, London (L.C.C.), in the early months of the year. Among many other diplomas the first diploma in medical radiology and electrology—that of Cambridge—instituted some twenty years ago, should be noted.

Fellowships, etc.

The Faculty of Radiologists (45, Lincoln's Inn Fields, W.C.2) offers a Fellowship (F.F.R.) to medical graduates of five years' standing who have spent at least one year in general clinical work at an approved hospital, have practised radiology exclusively for three years, and have held a radiological diploma for at least two years. Candidates are required to pass an examination and submit a thesis. Those who hold higher medical or surgical qualifications may be exempted from the examinations in general medicine, general surgery, or pathology. Full particulars may be obtained from the warden.

The National Association for Mental Health (39, Queen Anne Street, W.1) arranges training courses in certain aspects of psychiatry, mainly child psychiatry and mental deficiency. For the last sixteen years Fellowships have been given to enable qualified psychiatrists to obtain special training in child guidance at a recognized training clinic. Preliminary qualifications for the award of a Fellowship are the D.P.M. or equivalent experience in the psychoses, psychoneuroses, and mental defect. Fellowships are tenable at ten training clinics in England and Scotland. The usual course of training covers twelve months, half-time. This is considered desirable in that it enables experience to be gained in treatment for an adequate period. The training includes clinical work under the supervision of experienced psychiatrists, psychologists, and psychiatric social workers. The course of training is recognized by the Ministry of Education as being a suitable qualification for the medical directorship of an education authority's child guidance clinic, and up to the present this has been the only course of training recognized specifically for this purpose, though it is possible to get equivalent experience by personal arrangement. A fee of £60 is charged, but from a Fellowship Fund candidates requiring financial assistance may receive a grant with a subsistence allowance of up to £150. Applications for Fellowships should be made to the Child Guidance Section of the National Association.

The Tavistock Clinic (2, Beaumont Street, W.1) has specialized as a centre for the out-patient treatment of children and adults suffering from psychiatric disability. In addition to therapeutic work the Clinic and the associated Tavistock Institute of Human Relations are developing techniques in preventive psychiatry. These include discussion groups, selection techniques, and techniques for improving personal relations within working groups such as schools and factories. The educational programme includes courses for psychologists and social workers as well as doctors. The twelve-month half-time course for psychiatrists specializing in child psychiatry is organized jointly with the National Association for Mental Health. A parallel course for psychiatrists specializing in out-patient psychiatry with adults will begin in October, 1947. The number of students accepted for these courses is strictly limited. Two open-case conferences are held each week, intended for doctors and other professional workers interested to gain knowledge of recent developments in out-patient psychiatry.

The Institute of Psycho-Analysis (96, Gloucester Place, W.1) furnishes a part-time course, lasting about four years, in psychoanalytical theory and technique. It includes a personal analysis, attendance at lectures and seminars, and clinical work under supervision. The Institute does not set out to teach all aspects of psychiatry, and general psychiatric experience must be obtained at other clinics and hospitals. Completion of the course to the satisfaction of the training committee qualifies for election as an associate member of the British Psycho-Analytic Society.

THE MEDICAL REGISTER

During the year 1946 the number of additions to the *Medical Register* was lower than in any year since 1937. There were 2,237 registrations, as compared with 2,666 in 1945 and with between 3,300 and 3,500 in the mid-war years. This is the fourth year in succession in which there has been a reduction in the number registered. The same tendency is found in dental registrations. In 1946 the intake was only 247 graduates and licentiates, the lowest figure since 1932. The lowered numbers are a reflection of the reduced entry to the schools during the war, and this is likely to continue for some years to come.

The following table gives the position in respect of the *Medical Register* for the last ten years:

	Registered	Restored	Total	Removed owing to Death or Other Reason	Number on *Register* on Dec. 31
1937	2,214	29	2,243	1,090	60,163
1938	2,365	34	2,399	1,142	61,420
1939	2,968	49	3,017	1,027	63,360*
1940	2,384	37	2,421	1,102	64,679
1941	3,296	16	3,312	996	66,992
1942	3,556	7	3,563	1,127	69,428
1943	3,532	13	3,545	1,091	71,882
1944	2,971	11	2,982	1,218	73,646
1945	2,666	11	2,677	1,190	75,133
1946	2,237	14	2,251	1,092	76,292

* Figure adjusted in 1940.

In 1927 the number added by registration was 1,941, but in subsequent years it fell, and did not touch 2,000 until 1936. The total number on the *Register* has increased by 42% during the last twenty years.

Of the number of persons at present (1947) on the *Register*—namely, 76,292—46.95% have been registered by virtue of an English qualification, 26.76% a Scottish, 13.20% an Irish, 6.96% a colonial, and 0.54% a foreign. In addition there have been 817 colonial and 3,449 foreign temporary registrations in pursuance of the Medical Register (Temporary Registration) Orders, 1940 and 1941, made under the Defence Regulation 32B; but in accordance with the Emergency Laws (Transitional Provisions) Act, 1946, no further registrations have been effected under the Defence Regulation since February of last year. Since the beginning of registration in 1858 the number of persons registered has been 145,357.

The number of students admitted to the medical schools in the year 1946–7 was 2,553, a number which may be increased by about 100 when outstanding returns have been made to the General Medical Council. Figures for recent years have been:

1939–40 ..	2,623	1943–44 ..	2,426
1940–41 ..	2,398	1944–45 ..	2,612
1941–42 ..	2,361	1945–46 ..	2,610
1942–43 ..	2,468	1946–47 ..	2,553

The Goodenough Committee's recommended entry was 2,500 to 2,600 at present.

THE COST OF MEDICAL EDUCATION

A pre-war estimate of the cost of educating a man or woman for the medical profession was £1,500, though there were lower estimates. To-day allowance must be made for increased maintenance costs and in some instances increased tuition and examination fees. No fixed figures can be given, the cost varying in different parts of Great Britain. Some investigations in the North of England three years ago gave the total cost of six years' studentship as £1,070 if the student lived at home and £1,380 if he was in lodgings. The cost of the residential part of the course in Oxford was given in 1945 as about £250 per annum, but this has risen slightly since that time.

The fees charged at medical schools vary as between one school and another; an estimated average cost of training for six years, including books and instruments, is between £320 and £360. This estimate covers the First M.B. in the case of degree students and the pre-medical examination in the case of students reading for the Conjoint Diploma. The fees for examination for the L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas. are: for the first examination £6; for each of the two subjects in the second and in the third examination £3; and for the final examination, £6 for the first part and £9 for the second: a total of £33. The fees for university degree examinations vary between £20 and £40.

Further fees for tuition and examination will, of course, be required if it is decided to proceed to higher degrees or diplomas. On submitting for approval a dissertation for the degree of Doctor of Medicine of Oxford £10 is paid, and £17 before admission to the degree. The fee for the membership examination of the Royal College of Physicians of Edinburgh is 35 guineas, and when a Member is raised to the rank of Fellow he pays 38 guineas exclusive of stamp duty (£25). The examination fee for the Fellowship of the Royal College of Surgeons of Edinburgh is £20, and, having passed the examination, the applicant, on lodging a petition for election as Fellow, pays £30 to the College funds, of which £10 is remitted if he is already a licentiate. In the Conjoint Board in Ireland the fee for examination for the Diploma in Ophthalmic Medicine and Surgery is 12 guineas, for the Diploma in Anaesthetics 10 guineas, for the Diploma in Psychological Medicine 20 guineas, and for the Diploma in Child Health 6 guineas. The Liverpool School of Tropical Medicine has lately revised its fees for the course of instruction for the D.T.M.&H. The fee is now 40 guineas instead of 30 guineas, and for the revision course 20 guineas instead of 22½ guineas. These are merely examples of the scale; the fees are set out in the syllabus of the courses or the regulations for the examination.

Fees for Postgraduate Courses

The fees charged at the Postgraduate Medical School of London vary from 3 guineas for one week to 50 guineas for a year. At the associated London postgraduate institutes the fees vary considerably—at the Institute of Child Health, from 25 guineas for six months' attendance to 3 guineas for a week; at the Institute of Neurology the fees for the course are 20 guineas, and for attendance on the hospital practice 15 guineas for three months or 28 guineas for six months; at the Institute of Laryngology and Otology the composite fee, which includes enrolment as a clinical assistant, attendance on the hospital practice and at one of the comprehensive courses, but excludes dissection, varies from 35 guineas for three months to 45 guineas a year. At the Ophthalmic Institute the fee for Part I, which comprises anatomy, embryology, histology, etc., is 15 guineas, and for Part II, which comprises bacteriology, pathology, operative surgery, and all aspects of ophthalmic disease, 25 guineas. For attendance on the hospital practice the fees vary from 1 guinea for one month to 5 guineas for a perpetual ticket for any period longer than six months. At the Institute of Orthopaedic Surgery the fee is 30 guineas for a three-months course, including hospital practice. At the Institute of Urology the fee for a fourteen-weeks course is 15 guineas. At the Institute of Diseases of the Chest the fee for a half-time course lasting three months or more is 10 guineas, or 4 guineas for one month. At the Institute of Dermatology, for clinical teaching twice daily in the out-patient department, the fee varies from 1 guinea for one week to 15 guineas for a year. The fee for a short course of lectures in the summer months is approximately 4 guineas, and for a longer and more systematic course in the winter 10 guineas. At the Institute of Cardiology, for general physicians who enrol for all out-patient teaching sessions for one term of approximately three months, the fee is 25 guineas. Three intensive courses of lectures and demonstrations, each lasting a fortnight, are held during the year, and for these the fee is 12 guineas.

The fees at universities outside London vary considerably and should be ascertained from the deans concerned. At Bristol, postgraduate clinical work at hospitals may be carried out at fees of 3 guineas for one month, 5 guineas for two months, 7 guineas for three months, and 10 guineas for six months. Bristol arranges refresher courses on Sunday mornings for general practitioners, with practical demonstrations, and for these the fee is 1 guinea for a month.

The fees of the Royal Institute of Public Health and Hygiene for the preliminary (certificate) course in public health are 20 guineas (whole-time) or 25 guineas (part-time), and for the final (diploma) course, inclusive of fever hospital administration, 40 guineas (whole-time) or 45 guineas (part-time); for the Diploma in Industrial Health the fees for the Part I course are 20 guineas (whole-time) or 25 guineas (part-time), and for the Part II course approximately 50 guineas (whole-time) or 55 guineas (part-time).

THE NEWLY QUALIFIED

Immediately after qualification and registration the medical practitioner should join the British Medical Association and one of the defence societies.

The British Medical Association, with which the Canadian Medical Association and the Medical Association of South Africa are affiliated, has a membership of about 56,000. In the United Kingdom three-fourths of the members of the working profession are in the B.M.A. Medical practitioners are elected to membership by the Council of the Branch in the area of which they reside, or, if not resident in a Branch area (for example, serving with H.M. Forces), by the Central Council. The ordinary subscription for members resident in Great Britain and Ireland is 3 guineas, but there is a 2-guinea subscription in the case of members of not less than forty years' standing; members, of not less than ten years' standing, retired from practice; members not engaged in practice who are on the whole-time teaching staff of a Government department, university, or medical school, or whose whole time is occupied in investigation of scientific problems as distinguished

from routine laboratory work; and medical officers serving with H.M. Forces. Newly qualified practitioners admitted to membership before the expiration of two years from the date of registration pay 1½ guineas up to the end of their fourth year after registration, and members not resident in Great Britain and Northern Ireland pay 1½ guineas. The privileges of a member include participation in all activities of the Association, local and central, and in the government of the Association and the formulation of its policy; the receipt weekly of the *British Medical Journal* and its *Supplement*; the use of the houses of the Association (Tavistock Square, London; Drumsheugh Gardens, Edinburgh); and the advice and help of the central staff in professional matters. Forms of application are obtainable from the Hon. Secretary of the Division or Branch or from the Secretary at B.M.A. House.

The Medical Defence Union (49, Bedford Square, London, W.C.1), which is the oldest medical defence organization in the country, has over 31,000 members and has expended, since its inception, over £300,000 in fighting and settling cases on behalf of the profession. In 1946 the cases conducted by the Union amounted in all to 1,384. The annual subscription is £1, with an entrance fee of 10s.; the latter is waived in the case of those joining within one year of registration.

The Medical Protection Society (until lately known as the "London and Counties") (Victory House, Leicester Square, London, W.C.2) has a membership of between 23,000 and 24,000. The Society was the first organization to afford indemnity against adverse costs and damages, the first also to afford unlimited indemnity. During 1946 over 1,400 applications were received from members for advice and assistance. The annual subscription is £1 and there is an entrance fee of 10s. Membership is open to any registered medical or dental practitioner.

The Medical and Dental Defence Union of Scotland (113, St. Vincent Street, Glasgow, C.2) has a membership of nearly 6,000. The annual subscription is £1, with an entrance fee of 10s., the latter not payable by practitioners admitted within twelve months of qualification.

PRIVATE PRACTICE AND PUBLIC SERVICES

Private general practice will be the destiny of the greater number of men and women after qualification, but a proportion, after some experience of general practice, will undertake further study with a view to becoming specialists, and some, having taken the D.P.H., will enter the public health service. A comparative few will undertake laboratory work and medical research, which, though not the most remunerative branch of medicine, offers stimulating opportunities to those with the right mental equipment.

The Spens Committee, which reported last year, recommended a considerable increase in general practitioners' remuneration as compared with the total net income of practitioners for the three last pre-war years or with the previous level of capitation payment under the National Health Insurance service. The insurance capitation fee has now, for the first time in national insurance history, reached a level which is considered not unsatisfactory, and that fee provides a standard which more or less governs a number of other services which are on a capitation basis. The British Medical Association has also during the past year been instrumental in securing increases in fees for medical examination in connexion with life assurance, in fees for attendance on various classes of the population, in sessional fees at local authority clinics, and in the remuneration in other publicly organized services.

The Public Health Service

In the public health service a wide range of openings is now afforded in the shape of appointments under local authorities. The senior posts in the public health service are almost entirely administrative; the junior posts are generally mainly clinical, though with some administrative responsibility. It seems likely that under the National Health Service there will be an increased field for clinical preventive work.

Remuneration of whole-time officers in the public health service, hospital or other, has been governed for many years by what is known as the Askwith agreement. That agreement was terminated on March 31, 1946, and an interim agreement, without prejudice to an eventual settlement when conditions under the National Health Service have been fully explored, was reached at a conference of the associations of local authorities with the British Medical Association, a representative of the Ministry of Health presiding. Certain percentage increases on the basic Askwith rates were provisionally accepted, but these were found, in the light of present economic experience, to be unsatisfactory, especially in the case of those receiving the higher salaries—that is, over £1,000 a year—who in many instances obtained no advantage whatever from the revision. The subject was accordingly reopened, and recently, instead of the previously agreed 30, 20, and 10% increases on basic lower, medium, and higher salaries respectively, increases of 35, 30, and 25% have been accepted, the increases to take effect from July 1 of this year. Under this percentage increase bonus is retained, which represents 10% on the lower salaries, 7 or 8% on the medium, and 5% on the higher.

The chief employer of public health medical officers is the London County Council, with its 76 general and special hospitals and its 21 mental hospitals and institutions for mental defectives. Most of the general hospitals are already recognized training centres for candidates for the University of London M.D. examination and a number of them for the final F.R.C.S. and for the diploma of membership of the Royal College of Obstetricians and Gynaecologists. In England and Wales, apart from London, there are 91 local authority mental hospitals, and in Scotland 23, and in the whole of Great Britain some 20 others administered by voluntary bodies.

Industrial medicine offered wide opportunities during the war, and in many industrial concerns the medical officer plays an important part. The trouble is, however, that the great majority of workers in this country are employed in small factories—too small for the appointment of a whole-time medical officer. Something is being done in the way of grouping small factories together for medical service and employment of part-time factory doctors. The Association of Industrial Medical Officers exists for the purpose of bringing together medical men and women engaged in industrial medicine, whether whole-time or part-time. Four meetings are held by the association in each year, at which subjects having a bearing on industrial medicine are discussed. Ordinary membership is at present confined to those engaged whole-time, but associate membership is open to part-time practitioners. Various group meetings are also held in different parts of the country. There are groups in London, Birmingham, Nottingham, North-west England, Scotland, Tees-side, Leeds, South Wales, and West of England.

Service Abroad

The Colonial Medical Service offers many posts for men and women doctors. A candidate's preference for any particular part of the Colonial Empire is given full consideration, though it may not always be possible to meet his wishes. Vacancies occur most often in the larger medical departments in tropical Africa. Generally speaking, the initial salary is from £600 to £700 on a scale rising to £1,000 or £1,120, but there are a number of higher-scale posts, both administrative and specialist, with salaries up to £2,000. Government quarters are provided, together with first-class passage to and from the territory. Officers in this service have special opportunities in preventive medicine. Inquiries should be addressed to the Director of Recruitment, Colonial Office, 15, Victoria Street, S.W.1.

Ten research studentships for graduates in medicine and cognate sciences have recently been instituted by the Secretary of State for the Colonies. A graduate awarded a studentship will be eligible for a maintenance allowance assessed according to personal circumstances. The maximum rates of allowance are £260 per annum at the Universities of Oxford and Cambridge, £250 at the University of London, and £220 at other universities in the United Kingdom. The allowance is free of income tax. A studentship will normally be awarded for a period of two years, subject to a satisfactory report at the end of the first year's work from the supervisor nominated by the Colonial Medical Research Committee.

So far as the Indian Medical Service is concerned, with the transfer of power to the new Dominion Governments in India the I.M.S. as at present constituted has ceased to exist. There will be no further recruitment of Europeans in this country, and those officers now in the Service have the opportunity of retiring with compensation or electing to remain, probably as civilians, under one or other of the two Dominion Governments.

H.M. Forces offer openings for medical officers. Applications concerning commissions are dealt with by the Central Medical War Committee at B.M.A. House in London, or in Scotland by the Scottish Central Medical War Committee at 7, Drumsheugh Gardens, Edinburgh, 3.

Training of Army Officers

Officers already commissioned in the Royal Army Medical Corps may receive their postgraduate service training at the Royal Army Medical College, Millbank, London. The senior officers' course, held twice yearly, is in three parts: (1) the study of tropical medicine and entomology, military surgery, pathology, military hygiene, and psychiatry, spread over a period of about three months; (2) clinical instruction in medicine and surgery at London teaching hospitals, also spread over three months; (3) the study of specialist subjects by such officers as have qualified by examinations following the previous parts. The work is carried out either at the College or at a recognized teaching school. The nearest medical school, that of Westminster Hospital, undertakes intensive postgraduate courses twice a year for senior R.A.M.C. officers. Short courses in tropical medicine, entomology, and hygiene are given to officers about to go overseas. The instruction in tropical medicine includes a course of lectures and clinical demonstrations.

The principles and practice of modern military surgery are also taught at the College. The surgery of tropical diseases has its due place in the syllabus. The College has a small but very adequate department of anatomy, together with an excellent library of reference books and journals. In the teaching of pathology the syllabus of lectures for the junior and senior classes is designed to cover the subjects taught in the classes of tropical medicine, surgery, and hygiene. Specialists in pathology all receive their training, except in the performance of necropsies, at the College. The vaccine and serum departments, which are a part of the College pathological organization, are separately accommodated at the Emergency Vaccine Laboratory at East Everleigh, Wiltshire. The Hygiene Department has facilities for carrying out research. The laboratories are organized for instruction in hygiene laboratory work of all kinds; there is also a hygiene museum. Officers taking a specialist course in hygiene are given the opportunity of taking the D.P.H. and the D.T.M.&H., and most of the instruction for these diplomas is given at the College. There is a course in psychiatry, with demonstrations on clinical cases at Banstead and Sutton Emergency Hospitals. A school of radiology exists in the College.

MEDICAL STUDENTS AND NATIONAL SERVICE

Early in the present year a suggestion was made by the Ministry of Health that, with regard to conscription so far as it affected the medical profession, the age limits for general practitioners should be the same as those proposed for the general population—namely, 18 to 26—students having the option of doing their military service before or after completing their studies. The upper age limit suggested for specialists was 30, and the effect of this suggestion would be that doctors who had embarked on specialist training would be allowed deferment while holding hospital posts for the purpose, and would be liable to be called up when they had reached "graded" specialist status.

This suggestion was communicated through the B.M.A. to the British Medical Students' Association, which issued to the student bodies in all the medical schools the following points for consideration (assuming the period of service to be eighteen months, with five years on the reserve):

(1) Whether intending medical students should have the option of undertaking their military service either before or after completion of their medical training, as would be the case with students of other faculties.

(2) Whether, if there should be no option, military service should come before or after medical training.

(3) Whether doctors who had embarked on specialist training and had not yet undertaken their military service should be allowed deferment while holding hospital posts for the purpose until the age of 30.

The student bodies in 21 schools replied; the replies were carefully scrutinized and analysed, and the following statement was submitted by the Students' Association to the B.M.A.:

"In preparing the statement the assumption was made that service before medical training would mean a general military training as a fighting soldier, whereas service after qualification would be as a commissioned officer in the R.A.M.C.

"We are very definitely in favour of allowing the intending medical student to choose whether he will undergo his military service before or after his medical training. The multiplicity of arguments put forward (by the various medical schools) for and against both alternatives emphasizes the importance of allowing each individual to plan his time in the way he thinks most valuable.

"If, however, a decision were made in favour of uniformity, we are strongly of the opinion that military service should be undertaken after, rather than before, medical training, as it would be an utter waste to train a potential doctor as a fighting soldier. We should like to point out, however, that if all intending medical students were compelled to serve before going to college the supply of Service M.O.s would be entirely dependent on volunteers.

"We believe that recently qualified doctors who intended to specialize (and who have not already undergone military service) should receive special consideration with regard to deferment of service, but that such deferment should be until six years after qualification rather than until 30 years of age. We think that service immediately after qualification would deter intending specialists, who would not wish to return to resident hospital appointments after the conditions of higher salaries of the Services; moreover, from the point of view of most of the specialties little would be gained from a rather arid period in the R.A.M.C. looking after an exceptionally healthy and very limited cross-section of the male community."

The Academic Registrar of the University of London writes: "The majority of the schoolboys [boys from the secondary, grammar, and public schools who intend to take up medicine as a career] are . . . doing their military service before their entry to a university. Those students who enter before doing their military service will, I understand, be required to undertake some form of national service when they obtain their medical qualification. I believe that the authorities of the colleges are in favour of the boys undertaking their military service before entry, so that they will be able to embark on their chosen career as soon as they obtain their qualification."

B.M.S.A.

The British Medical Students' Association was founded in 1941 to promote the interests of medical students. It provides a method of communication between medical students and, for example, British and foreign students of other faculties, the British Medical Association, and Government departments. It publishes its own journal, and has issued a catalogue of medical films. But probably the most valuable aspect of its work is to be found in the clinical conferences which it has made possible. Three have already been held this year, at Sheffield, Edinburgh, and Leeds.

At the last Annual General Meeting it was decided to create a new category of membership for qualified men who would be invited to make a donation to the Association and who would receive a copy of the journal. This was done because it is obvious that an association which relies entirely on student support must always be in a precarious financial position, and it was felt that many students when they qualified would not wish to cut themselves off entirely from the B.M.S.A. Details about this new scheme may be obtained from the president, D. R. Cook, or the secretary, Joselen Ransome, at B.M.A. House, Tavistock Square, London, W.C.1.

Correspondence

Planning and World Population

SIR,—In the leading article on this subject (Aug. 9, p. 214) you mention four checks to the growth of population, one of these being voluntary control of the birth rate, and you suggest that the rise in the standard of living in tropical countries may result in a fall in the birth rate, such as has now occurred in Western Europe and America. Finally, you came to the conclusion that it is doubtful whether the birth rate will fall within a reasonable period in the face of prohibitive religious beliefs.

Is not this a somewhat pessimistic attitude? So far as I am aware there is no religious opposition to the practice of contraception in either India, China, or Japan. Indeed, a perusal of Norman Himes's book on the *Medical History of Contraception* (London, 1936) will show that the matter has concerned these peoples for centuries. Is it not more reasonable to conclude that it is the complete lack of education in regard to sexual matters which is one of the root causes for so much misery? Now that modern contraceptive methods are so reliable and comparatively cheap, it should be possible, by means of a well-thought-out education policy, to bring a knowledge of these matters to the women of the East. Were this done really effectively it should be possible to stabilize the population, reduce the infant death rate, raise the standard of living, and, presumably, prolong health and life. In addition, the danger of overpopulation, which is one of the major causes of war, would be considerably reduced. This is a problem of world-wide importance demanding the immediate attention of both politician and sociologist.—I am, etc.,

London, W.1. EDWARD F. GRIFFITH.

Anastomotic Ulcer after Somervell Operation

SIR,—If a surgeon of the experience of Mr. Harold Dodd can fall (*Journal*, Aug. 2, p. 170) for Mr. Somervell's operation, it is high time that the originator of the principle of gastric arterial ligation spoke. My operation, which has been named "gastric ligation," and to which Mr. Somervell in 1942 referred, was started in 1931, and I performed about 80 experiments on dogs; and over 1,000 such operations have been done by me and my assistants during the last sixteen years for peptic ulcer. The preliminary results were published in 1937 in America (*Proceedings* of the International Assembly of the Inter-State Postgraduate Medical Association of North America).

In the same year Prof. Orr, then of the Miraj University, saw my work, and apparently gave an erroneous report to Mr. Somervell of the details of my operation. Mr. Somervell ligates only the main gastric vessels, which seventeen years ago I had shown was a waste of time. Gastric ligation is simply a sympathetic denervation so that the uncontrolled vagi will rapidly empty the stomach and diminish the time stimuli to gastric secretion. Devascularization is a passing phase. My operation of gastric ligation means a quadruple and multiple ligature of both mesenteries from the oesophagus to near the pylorus. Dr. Ferdinand Lee, of Baltimore, working on recovery of sympathetic function after denervation, showed that the ligature must be a hurdle of at least four thread ligatures and not a division of the arteries.

So many vain attempts to cure peptic ulcer by surgery have been made that I intended to wait fifteen years before I published my results. The summary of my work is that in dogs this widespread gastric ligation will heal permanently all peptic ulcers produced either by the Mann-Williamson experiment or by massive doses of cincophen. In peptic ulcer in man the results are very variable. This gastric ligation with gastro-enterostomy in gastric or duodenal ulcers is a far, far better operation than gastro-enterostomy alone. It is not as good as a high partial gastrectomy; yet it may heal the rare anastomotic ulcer resulting from high gastrectomy. Gastric ligation would, without risk, often cure an anastomotic ulcer at a time when at the Manchester Royal Infirmary the mortality following partial gastrectomy for such an ulcer was in the neighbourhood of 37%. The mortality of gastric ligation is simply that of chest complications and is therefore suitable for the rank and file of surgeons who are not specialists in gastrectomy.

I repeat, however, that simply to ligate the main arteries singly, however successful in the Oriental, is futile in the Westerner, and the term "physiological gastrectomy" is a misnomer. The "Somervell operation" is no better and no worse than a simple gastro-enterostomy.—I am, etc.,

Manchester. WILSON H. HEY.

Fungus Poisoning

SIR,—The *Journal* of Aug. 23 includes two articles on fungus intoxication—too topical at this time of year—but both omit any mention of the pathogenesis and treatment of *Amanita phalloides* poisoning, so very important because there is every reason to expect a curative response if the fact is recognized promptly and treatment instituted at an early stage.

It should be stressed that, if symptoms appear within two to three hours of ingestion of the fungus, the probable cause is muscarine poisoning, and the correct treatment is immediate atropine plus stomach washings followed by tubal administration of activated charcoal or magnesium trisilicate or kaolin—given in the order of activity as absorbents of alkaloids. But if symptoms—usually somnolence, often but not always preceded by diarrhoea and vomiting—appear eight hours or later after the ingestion then the intoxication is not due to muscarine, and the administration of atropine, which is the usual treatment, only hastens the fatal termination.

The cause of death is truly hepatic damage, as your annotation mentions (p. 302), but the reasons, or suspected reasons, it does not mention. *Amanita* causes a progressive hypoglycaemia which becomes so pronounced that there is reason to believe that it is this directly which causes the coma and then death. This was pointed out by A. R. Dujarric de la Rivière (*Le Poison des Amanites Mortelles*, Masson et Cie, Paris, 1933), and later Binet, L., and Marek, J. (*Presse méd.*, 1936, **44**, 1417), showed experimentally that the administration of glucose by vein was life-saving in rabbits to which toxic doses of *Amanita* had been given. It is reasonable to suspect that the toxin causes hypoglycaemia, which itself might be the cause of death, or that the toxin which causes this breakdown of glycoses might occasion destruction of the hepatic glycoproteins and so produce atrophy, or that the removal of glycoses from the liver prevented hepatic glycuronation and so permitted atrophy. I did a little tentative work on this some years ago with the idea that so potent a glucose depressor might be of value in diabetes mellitus, but stopped the work when this hypothesis of its action was considered.

The treatment, therefore, of poisoning eight hours or later after the intake of fungi should be saline purges, unless diarrhoea has occurred. At the earliest possible time intravenous glucose saline with added calcium gluconate should be given as a drip, and this controlled by blood sugar estimations if possible. De la Rivière also advises the administration of raw brain by mouth and quotes some cases successfully treated in this way (*loc. cit.*), but it is considered that this is not likely to be of much help because little if any of the poison will be still unabsorbed in the alimentary tract by the time that symptoms appear and are diagnosed.—I am, etc.,

Bristol. A. T. TODD.

Case of Smallpox with Minimal Lesions: New Diagnosis

SIR,—We should like to draw attention to the case reported in the *Journal* of June 7 (p. 807) by one of us as a case of smallpox with minimal lesions. This diagnosis was supported by the report made by one of us (A. W. D.) that variola virus was isolated from the crusts and swab submitted from the patient. However, further examination of the virus isolated showed that it was not variola; it was subsequently proved to be the virus of herpes simplex. Owing to a misunderstanding the author of the published report of the case was not informed of the later laboratory findings until after that report had appeared in June. The case was in all probability one of generalized infection due to the virus of herpes simplex and it is hoped to submit for publication details of the evidence on which this view is based.—We are, etc.,

T. P. EVANS.
RUPERT H. KIPPING.
Liverpool. A. W. DOWNIE.

Intravenous Ergometrine for Retained Placenta

SIR,—Prof. J. Chassar Moir in his letter (Aug. 23, p. 309) states that "it is a matter of opinion whether severe third-stage haemorrhage is best dealt with by injection of an oxytocic drug, or by prompt manual removal of the placenta when simpler manipulative measures have failed." He then goes on to say that his own preference, if the uterus is relaxed, is for an oxytocic drug.

I feel that the treatment of all severe third-stage haemorrhages should not be along any such line of routine therapy. There are the well-known physical predisposing causes of third-stage haemorrhage, such as multiple pregnancy, exhaustion after a long labour, encroachment of the placenta on the lower uterine segment, etc., in which the giving of an oxytocic drug may be the most convenient and best treatment, but there is a group of cases in which third-stage disordered action of the uterus is due to psychogenic causes. These cases may follow a primary uterine inertia, or other evidence of functional uterine disorder, in the previous stages of labour. There may have been openly expressed morbid fears, or, more often, these may have been suppressed. These cases exhibit a degree of collapse out of all proportion to the amount of blood lost. In my opinion they are best treated by giving an anaesthetic (I prefer open ether) and manual removal of the placenta, followed by an oxytocic drug and morphine. It is a feature of these cases that the condition of the patient improves rapidly during induction of anaesthesia, and their condition tends to deteriorate with the return of consciousness unless morphine has been given.

With the remainder of Prof. Chassar Moir's letter I am in complete agreement, and he has done a valuable service in pointing out the certainty of undesirable side-effects being produced if a dose of ergometrine 0.5 mg. is given intravenously, as advised in "Any Questions?" (Aug. 2, p. 195).

Finally he criticizes, by inference, the routine administration of ergometrine in the third stage. This practice appears to be an attempt to improve on normality, and will be looked upon by future generations in the same light as we view to-day the routine (ritualistic?) purging of children every Friday night.—I am, etc.,

South Shields. TERENCE ROBINSON.

Oxygen Poisoning in Man

SIR,—Prof. J. B. S. Haldane is wrong in stating (Aug. 9, p. 226) that I attribute oxygen poisoning to carbon dioxide accumulation. I take the same view as he does that it enhances oxygen poisoning, and that is why Dr. Donald observed oxygen poisoning with exceptionally low pressures, particularly in the case of a diver tested under water in a dock basin. In this case anxiety may have caused rapid shallow breathing and consequent accumulation of the dead-space carbon dioxide. I think that "nitrogen" poisoning may really be due to accumulation of carbon dioxide.—I am, etc.,

Chalfont St. Peter, Bucks. LEONARD HILL.

The Extent of Neurosis

SIR,—The leading article entitled "Neurosis and Industry" (Aug. 16, p. 257) has tempted me to inform you of the result of a survey I undertook in June in an endeavour to estimate the proportion of psychic disturbances in a general practice. I did this for my own interest, but the result was surprising even to myself.

The survey was undertaken at a time when the surgeries were not heavy, when there was time to discuss complaints, conduct examinations, and assess the situation more fully than usual. It occupied 17 days and concerned 100 consecutive new patients coming to the surgery between the age of 5 and decrepitude; 46% were frequent attenders whose general physical and emotional backgrounds were well known. Each patient was given ten units of illness, and these ten units were apportioned to psychopathic or rationally physical disorders as best I could judge. A middle-aged woman stating that her nerves were out of order, complaining of irritability, ready fear, and insomnia, and demanding a tonic would be given a bromide mixture and rated as ten units of emotional anxiety, *nil* physical. A man exhibiting a follicular tonsillitis, with a temperature of 100° F. (37.8° C.), wanting a gargle, and stating he would like to continue at work would be sent home to bed, given appropriate treatment, and assessed as ten units of rationally physical disorder. Many cases were intermediate, with anxiety enlarging a normal ailment. Of the total 1,000 units 453 were attributable to psychic causation and 547 to adequately physical disorder—a proportion which indicated that of every twenty patients coming to the surgery nine were more emotionally ill than actually so.

While the assessment must be regarded as subjective on my part it was not undertaken lightly, and almost four years of completely psychological work has given me fair ground for carrying out such an investigation with accuracy. There must be many experienced general practitioners who could carry out such an estimation, and their figures would be most interesting to know and of value in calculating the neurotic element in illness—I am, etc.,

Stockton-on-Tees. L. F. DONNAN.

A Giant Naevus

SIR,—Miss X, aged 21, consulted me in June, 1940. Her history was that she was born with a small port-wine stain on the margin of her lower jaw, that it had grown steadily, and that she wanted to be rid of it as it precluded her admission into a convent. She said it had not caused her any trouble, that her general health had always been good, and her complaint was more of a nuisance and disfigurement than anything else.

On examination I found a tumour, port-wine in colour, with large veins coursing over a coarse and roughened surface, hanging over her left breast and completely occluding it. Its boundaries were as follows:—From the mid-point on the chin it extended along the border of the lower jaw, skirting the lobe of the ear to the middle of the nape of the neck, just below the occipital protuberance; medially down along the midline of the neck, and half-way down the sternum; laterally, from the occipital protuberance obliquely across the back of the neck to the top of the shoulder, and curving inwards to meet the opposite side at the mid-sternal level.

The excision of the tumour appeared a formidable task owing to its vascularity. A dose of 16,000 mg.-hours was given superficially with radium needles distributed over Columbia paste plaque, screened by lead sheeting 1 mm. thick. Three weeks later, with circumferential local analgesia, the whole of the tumour was excised. It consisted of the thickened skin and platysma. The bleeding was not troublesome. The weight of the tumour had dragged upon and loosened the surrounding skin, and it was quite easy to close the gap left by the base of the tumour. The wound did quite well, except for a small area the size of a florin, which healed by granulation. I heard from the patient a few weeks ago that she was quite pleased with the result of the operation.—I am, etc.,

Newtown, Waterford. A. J. D'ABREU.

Poliomyelitis

SIR,—According to your report[1] of a recent meeting at the Central Public Health Laboratory, Colindale, there is no evidence that flies are helping to spread infection in the present outbreak of poliomyelitis. This is so opposed to American experience that I was not surprised to learn from the Ministry of Health that it is essentially an assumption. The statement is not based on specific investigations, for none has been attempted.

American research[2] has shown that the virus can be recovered from house-flies and blow-flies trapped in urban and rural areas during poliomyelitis outbreaks. Food contaminated by such flies was found to produce the disease when fed to chimpanzees.[3] The flies almost certainly acquire the virus from the stools of poliomyelitis patients or carriers. The virus has been recovered from the stools of a child 123 days after an abortive attack,[4] though three weeks appears to be the average time of persistence.[5] Such an experienced researcher as Sabin[6] inclines to the view that flies are a more important vector than droplets during poliomyelitis epidemics.

One objection to applying the fly-carrier theory to the present epidemic is the apparent lack of opportunity for flies to settle on infected stools. Though the virus has been detected in

sewage,[7] the dilutions involved would seem to be too great for sewage farms and rivers to be important centres of virus pick-up. Earth closets are obvious sources, but they are mainly restricted to rural areas, and most of the cases are reported from towns.

There is, however, one persistent source of fresh human stools, open to visitation by flies, embracing every town. I refer to our vast network of railway lines. Because of the primitive sanitation on our trains and the large number of apparently healthy people who may be poliomyelitis carriers, railway tracks may be an important source of the virus. From it flies may contaminate food in near-by warehouses, restaurants, and homes. This might account for the widely scattered outbreaks of the disease and the speed with which it travels both here and in America.

The fact that few cases are reported from country districts, where there are earth closets as well as railway lines, does not oppose this theory. In those countries like China and the Philippine Islands,[6] where sanitation is primitive, the native populations do not suffer from epidemics of poliomyelitis. Yet the virus is there, for British and American troops quickly acquire it and go down badly with the disease. It is also a fact that poliomyelitis is most widespread in those countries with the most efficient sanitation and that the disease has increased there progressively during the last fifty years.

All this suggests that under conditions of bad sanitation the bulk of a population somehow acquires immunity to poliomyelitis. The disease is rare in children under one year of age and it may be that they tolerate the virus. Sabin[6] has in fact suggested that, with a widespread source of the virus and many flies, children may normally suffer a symptomless attack during their first year, acquiring immunity in the process. This would explain the comparative rarity of outbreaks in rural areas where there are still earth closets. It would explain why poliomyelitis increases in countries where improvements in sanitation reduce the chances of acquiring natural immunity. It would support my contention that raw stools on railway tracks running through towns are a menace.

It is difficult to see, since so many factors are involved, how this theory could be tested adequately. I would suggest that the possibility that it may be right should be sufficient incentive for the Government to order the fitting of properly serviced chemical toilets on trains as early as the present situation permits. Now that we have had one epidemic of poliomyelitis, American experience suggests we can expect more.—I am, etc.,

London, E.C.4. CHAPMAN PINCHER.

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SIR,—I have read with much interest recent remarks appearing in the *B.M.J.* anent precautionary measures against the spread of poliomyelitis. The present extensive outbreak, the greatest yet experienced in this country, is naturally causing grave concern, and there is reason to believe from a study of statistics of past years that the height and extension of the infection have not yet been reached; in fact, any marked subsidence is not likely to occur until October. The widespread nature of the present epidemic calls for every effort to limit extension and to bring about its reduction as quickly and as far as possible.

While there is no doubt that the virus of the disease is largely communicated from one person to another by secretions of the oropharynx, either by direct personal contact with actively infected individuals or with healthy carriers, there is also definite evidence that the virus commonly appears for some days and even weeks in the faeces of typical and of abortive cases. The virus, which withstands drying for considerable periods, has further been demonstrated on flies and on exposed food in the homes of poliomyelitis cases. This is strongly suggestive that the infection can be disseminated in much the same manner as the enteric infections, such as paratyphoid, epidemic diarrhoea, dysentery, and typhoid. Unfortunately, owing to the nature of the virus of poliomyelitis, it is not possible as yet readily to detect contamination of food, water, fomites, etc., as is the case with these other infections caused by easily demonstrable micro-organisms.

Statistical evidence, however, shows so close a correspondence between the seasonal incidence of poliomyelitis and that of the enteric infections as very strongly to suggest that analogous factors operate in dissemination. For example, allowing for slight lag between time of infection and death (actual morbidity figures not being available), the incidence of deaths from enteritis presents a very remarkable correspondence with that of poliomyelitis. Taking the five years between the two wars 1924 to 1928, a period covering the mid-high epidemic poliomyelitis year 1926, and one which was comparatively little disturbed by fluctuations or geographical migrations of population, almost perfect correspondence existed in the incidence of poliomyelitis and deaths from enteritis; in fact, for the whole period I have found the coefficient of correlation to be no less than 0.95. During these years, moreover, the annual relative magnitude of the two infections also closely corresponds. In several other years an almost equally close correlation appears, the incidence commencing to rise in the same week and reaching maximum and minimum in a not very dissimilar manner. Somewhat similar though less well sustained correlations also obtain in respect of typhoid and paratyphoid fevers.

The notable fact that the initial rise of poliomyelitis and of the enteric infections almost invariably occurs at identically the same period of the year and that the gradients in the respective curves of incidence closely resemble one another throughout the remainder of the year is, I suggest, strongly indicative that, apart from climatic conditions, common disseminating factors are in operation. Moreover, the fact that the incidence of poliomyelitis has in general predominated more in rural than in urban areas is a point in itself somewhat significant.

While unquestionably attention must necessarily largely be concentrated upon the well-recognized dissemination of poliomyelitis through direct personal contact with infected cases and with carriers, I think, at all events until far more is known of the epidemiology of poliomyelitis than is at present the case, it is highly desirable that all those precautions and measures commonly carried out in respect to the prevention of the enteric infections should similarly rigidly be applied to the prevention of poliomyelitis.—I am, etc.,

Christchurch, Hants. C. CONYERS MORRELL.

Penicillin in the Treatment of Diphtheria

SIR,—We have read with considerable interest Dr. David Long's article on "Penicillin in the Treatment of Diphtheria" (June 21, p. 884). We are glad to find that our article has roused some interest among scientific men abroad. Being a lecturer on bacteriology in a famous school he can certainly comment on our bacteriological findings. Ours was mainly a clinical study, but such bacteriological examinations as were relevant to our study were undertaken to implement our diagnosis and assess the effects of penicillin therapy.

The clinical diagnosis of all our 27 cases was beyond dispute, and the presence or absence of secondary invaders, which are mainly β-haemolytic streptococci and pneumococci in our place, would not alter it. The classification of our cases as early or otherwise was made on the gravity of the general symptoms and the size and extent of the membrane and not by the fever alone. The clinical reports, though brief, contain all the salient features. After all, brevity is essential in writing anything for journals in these days. "Patch" is the common expression for the pseudomembrane in diphtheria, and we wonder why it should not be used in clinical description. If Dr. Long would read the case reports he would find that not only did we see the disappearance of the patch from the throat but daily swab examinations were undertaken, and the dates when the throat swabs became negative were also mentioned. These swabs were cultured and reported only after a full study by the most competent bacteriologist, and we did not depend on morphological study alone as assumed by our friend. The typing could not be undertaken for non-availability of culture media at the time.

Treatment of diphtheria with penicillin alone is no doubt risky and adventurous, but one must be prepared to take some risk if he wants to cover a new field of therapeutics. Dr. Long will find in the case reported by Dr. A. D. Symons in the *Medical Officer*, 75, 224, that a fairly severe case of diphtheria was cured by him with penicillin alone without any antitoxic serum. In fact, he should rightly claim the priority in this new adventure. We are

continuing our work here in Calcutta in greater detail and we hope to acquaint Dr. Long with our results as soon as our data are complete. We assure him that this further work has only confirmed our previous conviction that penicillin is very effective in the treatment of early and even moderately severe cases of diphtheria without the administration of antitoxin, and that the bogy of the toxin killing the patient by involvement of cardio-vascular apparatus and the nervous system if antitoxin is not given early should not be entertained.

Dr. Long has also taken an exception to our argument of economy in favour of this method of treatment, but little does he know that 90% of our countrymen hardly get two square meals a day. Only the other day three million people died of starvation in the province of Bengal. Cost may not count in the British Isles, but it is the prime factor in everything that we do here in India, including the treatment of our sick people. Before we conclude, we would request Dr. Long to approach the M.R.C. for a grant with which he may do some practical work in one of the infectious diseases hospitals in London to put the matter to test before hurrying to condemn what may ultimately be accepted as truth all over the world.—We are, etc.,

M. N. DE.
L. K. GANGULI.

Calcutta.

The Lazy Eye

SIR,—Surely Dr. William Moodie (Aug. 23, p. 310) has got hold of the wrong end of the stick psychologically? Should it not be that *because* children have these defects they may be backward educationally? Children wearing glasses and having one eye covered up are presumably squinters. By covering the good eye and making the defective one work, as described in letters by myself in the *B.M.J.* (Aug. 17, 1935, p. 317, and Sept. 28, 1946, p. 475), the worse eye can be materially improved in vision. The younger this is commenced the better, and progress, mentally, takes place with the improvement in vision. This is even possible in adults who lose the sight of a good eye and are left dependent on an eye that had bad vision in spite of any glasses up to the age of forty or so, there being many war and occupational examples of such injuries.

Dr. Moodie mentions equal bilateral vision in connexion, presumably, with covering up an eye. This does occur sometimes in squints, which can look straight ahead with either eye. Such cases of alternating squint are difficult to treat and not very satisfactory even when operated on, as there is some squint left even then, although nothing may be apparent when the patient looks straight ahead.—I am, etc.,

SYDNEY TIBBLES.

London, W.1.

SIR,—Although I quite agree with Dr. William Moodie (Aug. 23, p. 310) that in certain cases in which occlusion of one eye is indicated on ocular grounds it has to be abandoned on account of its ill effect psychologically, Dr. Moodie did not, however, state the generally recognized fact that the main reason for occluding one eye of a child is in the case of a constant squint, where one eye deviates and has in consequence become amblyopic from disuse in spite of appropriate optical treatment.

In my experience if occlusion is properly carried out at an early age rapid improvement of the vision of the amblyopic eye takes place, except in rare instances. Such treatment is followed by orthoptic exercises (and operation if necessary), so that the squint is cured before the age at which education becomes of real importance, and before the child is likely to be adversely affected physiologically or psychologically by such treatment.—I am, etc.,

T. KEITH LYLE.

London, W.1.

The Coroner's Court

SIR,—As your Medico-Legal Correspondent points out in the footnote to Dr. B. N. Blood's letter (Aug. 16, p. 272) the Act of 1926 does give the coroner powers as to committing for trial; but surely this is modified by rules as laid down in the same section of the Act?

I have found that the invariable procedure for a person "arrested on a coroner's warrant" is for the accused to appear before the magistrates, who decide whether there is a case for trial. It frequently happens that the inquest is a formal matter for identity and cause of death to enable the coroner to issue a burial order, and it is then adjourned pending criminal proceedings. A peculiar situation may arise when a person arrested on a coroner's warrant appears before the magistrates and they decide that there is no case against him. In such circumstances it appears that the coroner's warrant still stands, and the accused, already "cleared" by the magistrates, may have to appear at the assizes for trial.

It may be hoped that the committee at present considering the working of the Coroners Acts will suggest useful amendments, and that among them will be found the principle that the coroner's inquest is primarily concerned with establishing identity and with cause of death.—I am, etc.,

W. MCNAUGHTAN.

Bournemouth.

Salaries of Specialists in N.H.S.

SIR,—I was interested to read Dr. W. Lindesay Neustatter's letter (Aug. 23, p. 309) and hasten to write to agree with him. I think that the reason of a difference of opinion that has arisen over the payment of psychiatrists as compared with physicians and surgeons has been due to the fact that the standard of the D.P.M in the past has fluctuated, whereas both the M.R.C.P. and F.R.C.S. standards have remained at a consistently high level. Were there one examining body in the country for the D.P.M. the fluctuations might be overcome. Nevertheless this variation of standard should not be responsible for decreasing the salary.

If it is considered that, before a candidate is thought suitable in experience and training to be appointed as a specialist in psychiatry either to a senior post in a mental or a general hospital, or by a local or Government authority, a D.P.M. is necessary, then in that case the D.P.M. is the criterion of a specialist in psychiatry and the salary should be the same as that for medical or surgical specialists. The view that physicians and surgeons are more concerned with "matters of life and death" than psychiatrists is in my opinion due to gross ignorance of the work of the psychiatrist. Dr. Neustatter points this most admirably, and I would add that a psychiatrist in a general hospital is on occasions asked for an opinion as to diagnosis, treatment, and disposal of cases where neither physicians nor surgeons have come to a definite conclusion.—I am, etc.,

NORTHAGE J. DE V. MATHER.

Manchester.

POINTS FROM LETTERS

Poliomyelitis

Dr. J. N. MCINTOSH (Gloucester) writes: There have been occurring in my practice a number of cases (children and adults) of pharyngitis, tonsillitis, and tonsillitis-with-diarrhoea, all having a temperature. The symptoms lasted on an average three days, and the patients completely recovered. Owing to the possibility of these cases being anterior poliomyelitis or polio-encephalitis, all were kept in bed, treated with sulphonamides, and isolated for at least ten days. . . . Now that cases of poliomyelitis are increasing, I am suggesting that all cases of "sore throat" and diarrhoea, even without any fever, be treated on the above lines.

Col. P. F. CHAPMAN, I.M.S. (ret.), writes: Is it not possible that the present prevalence of infantile paralysis may, in part at any rate, be due to some article in our restricted and modified dietary? In the Central Provinces in India there were after famine years widespread outbreaks of a form of spastic paralysis. This was caused by the consumption of the millet, *Lathyrus sativa*. In ordinary times this was only used as an adjunct to other grains, and it was only when used as a staple diet that the paralysis occurred. Is it not possible that in the modification of the austerity diet we may have introduced some article which may be causing this widespread epidemic? Soya-bean flour is largely used, and dried eggs are imported in large quantities. As so far there seems to be no satisfactory method of checking this epidemic, perhaps a long shot such as this may be excusable and excused.

General Knowledge and General Practice

Dr. WARREN MORRIS (Bath) writes: I hope Dr. R. Lawrence (Aug. 9, 230) will not feel injured if one suggests that the injury done to one by an overdose of morphine, or to one's pocket by the present price of tobacco, is in neither case traumatic.

STREPTOMYCIN

The Ministry of Health on Sept. 2 stated that preliminary results of the streptomycin trials organized by the Medical Research Council had proved sufficiently encouraging to justify the view that, as available supplies of the drug permit, patients suffering from tuberculous meningitis or miliary tuberculosis should be given the opportunity of receiving treatment with the drug. Though streptomycin is said to be the best drug at present available for the treatment of these conditions, it prolongs life and relieves symptoms in only a proportion of the cases, and it is too early to say yet whether it ever produces a permanent cure.

The production of streptomycin in this country is still very limited, but additional supplies from the United States have enabled arrangements to be made for a certain number of medical schools to receive an allocation each month for use in teaching or associated hospitals. The number of beds in the United Kingdom for which supplies are available at the moment is about 150.

The cost of streptomycin is still very high, and for the time being the supplies will be distributed by the Government to the medical schools free of charge. In view of the limited experience of treatment with streptomycin in other conditions, the medical schools have been asked for the present to restrict treatment with the drug to cases of tuberculous meningitis and miliary tuberculosis. It is not recommended for use in chronic pulmonary tuberculosis. The following is a list of the hospitals in England and Wales and Northern Ireland at which cases of tuberculous meningitis and miliary tuberculosis will be treated with streptomycin:

Birmingham.—The Children's Hospital, Ladywood Road, Birmingham, 16; *Bristol.*—The Bristol General Hospital, Bristol, 1; *Leeds.*—The General Infirmary, Leeds; *Liverpool.*—Alder Hey Children's Hospital (6 children's beds); Royal Southern Hospital, Fazakerley (3 adult beds); *London.*—The Middlesex Hospital, W.1; St. Bartholomew's Hospital, E.C.1; The London Hospital, E.1; St. Mary's Hospital, W.2; St. Thomas' Hospital, S.E.1; Guy's Hospital, S.E.1; *Manchester.*—The Royal Infirmary, Manchester; *Newcastle.*—Royal Victoria Infirmary, Newcastle; *Sheffield.*—The Children's Hospital, Western Bank, Sheffield, 10.

Cardiff.—The Cardiff Isolation Hospital.

Belfast.—The Whiteabbey Sanatorium, Whiteabbey; Purdysburn Fever Hospital, Purdysburn.

Scotland.—Similar arrangements are being made and details will be announced shortly.

Medical practitioners who have a case of suspected tuberculous meningitis or miliary tuberculosis should get in touch with the nearest hospital on this list, or (in the case of hospitals in the London area) with the Emergency Bed Service (Monarch 8515).

This scheme for the treatment of tuberculous meningitis and miliary tuberculosis does not in any way affect the arrangements already made by the Medical Research Council for the treatment in certain hospitals of cases of meningitis due to *Haemophilus influenzae*.

The authors of *The Science of Seeing* (by Ida Mann and Antoinette Pirie, Pelican Books, 1s., Harmondsworth) are to be congratulated on the attractive way in which they have addressed the lay public. They instruct the reader in the reaction of the amoeba to light, and after accounts of more complex visual organs, describe the human eye, whose structure and function they discuss in a clear and almost colloquial style. They include chapters on the retina and visual purple, cone cells and colour vision, and vision and the vitamins. In the chapter entitled "Things that May Go Wrong with Our Bodies" they comment that a number of reasonably well educated people could give only three causes of blindness (congenital, war trauma, and cataract), and none had any idea of the difference between an oculist and an optician. In "Facts and Fancies about Ocular Hygiene" they explode many erroneous ideas prevalent among the laity—eye work does not harm the eyes; glasses do not tend to weaken sight; eye baths, washes, and drops are unnecessary and unsatisfactory substitutes for the flow of tears in a normal eye and may even cause conjunctivitis; it is not possible to take out the eye, scrape it, and put it back again; and cataract is not a film which grows across the eye. They expose the humbug of eye exercises, other than orthoptic exercises in the treatment of squint and muscle imbalance. They briefly consider disturbance of the visual mechanism, diseases of the eye, and injuries, and at the end of the book give an account of the training of the blind and the way in which eye defects are treated in England to-day.

Obituary

SIR THOMAS CAREY EVANS, *M.C.*, F.R.C.S.

Sir Frederick Menzies writes: The sudden death of Sir Thomas Carey Evans must have come as a great shock, and a deep sense of grief will be felt by his many friends in London and North Wales. For some years he and I were closely associated together in the work of the L.C.C. hospital service, and it is in this connexion that I wish to pay my humble tribute to his memory, for no "Chief" could ever have had a more loyal and devoted colleague. Carey Evans was the first medical superintendent to be appointed to Hammersmith Hospital after it had been decided that the British Postgraduate Medical School should be located there. It was obvious from the start that the choice of the new medical superintendent was a matter of paramount importance inasmuch as his duties and responsibilities were to be of an entirely different character from those of every other medical superintendent in the L.C.C. hospital service. At Hammersmith the clinical work was to be the responsibility of the staff of the medical school and the administration entirely in the hands of the medical superintendent. Dual control of a large hospital unit is always a difficult task and it was peculiarly so in this instance, not only because it was a complete departure from L.C.C. practice but also because a postgraduate medical school in the midst of an L.C.C. hospital organization was an entirely new venture. The position was in fact one which obviously called for great tact, diplomacy, and a gift for harmonious co-operation.

There is no doubt that the selection of Carey Evans for the post of medical superintendent in these difficult and delicate circumstances was a wise decision and one which was fully justified as the years went by. Great as were difficulties he had to cope with from time to time in connexion with this dual venture, his anxieties and responsibilities were immensely increased when war broke out in 1939. Nevertheless, he remained at his post throughout the whole of the war period with scarcely any holiday at all, and there can be no doubt that the constant strain and stress of these long years did much to undermine his health, so that it was not surprising that he found it necessary to retire from the L.C.C. hospital service on grounds of ill-health in the autumn of 1945. Thereafter he returned to Criccieth, where he had shortly before retirement purchased a charming house and small estate, most beautifully situated amidst marvellous scenery of mountain and sea. He threw himself with great vigour and enthusiasm into the modernization and renovation of his new home and the development of the attached gardens and farm. In these pursuits he found great happiness for himself and gave great pleasure and generous hospitality to his neighbours and friends. His sudden death so soon after his retirement is a tragedy in itself, as it occurred at a moment when he seemed at long last to have attained his lifelong ambition of a beautiful home in the beautiful surroundings of his native land. The profound sympathy of all his friends will be extended to his widow and children.

Prof. G. Grey Turner writes: Carey Evans and I first met when we travelled up the Tigris together on a paddle-steamer in the very hot summer of 1916. He was moving up with a field ambulance, and the way he directed the operations for the rescue of one of his mules that had somehow fallen overboard filled me with admiration and marked him out in my mind as a man of determined action. It was not until nineteen years later that we came together again, when in 1935 I took up my duties at the newly formed postgraduate school at Hammersmith Hospital where Evans was superintendent. The warmth of his greeting and his friendly and cheerful co-operation from that moment are still an inspiring recollection. Apart from fine wards and new operating theatres, there was no sort of provision for a department of surgery at the school, and I found myself depressed and unhopeful; but Evans came to the rescue and at once arranged that I should set up my department in the old *x*-ray quarters, shortly to be evacuated into the new buildings near the administrative part of the school. He also

found storage for the very large number of pathological specimens which I had brought down from Newcastle-on-Tyne, and from then on continued to be most helpful up to the moment of his retirement ten years later. His cheery optimism was a tremendous encouragement to all at the school in those early struggling days, and the way in which he could smooth things out and get round difficulties was remarkable. How he managed to get over threatening situations was not revealed, but under his supervision we got things done. As a surgeon himself and a Fellow of the College he was in a position to understand our problems, and he was withal really interested in our work and, may I say, encouragingly appreciative. With a self-contained residence in the hospital he was able to exercise his gift for hospitality, and many were the charming functions which he arranged. In all this he was most ably assisted by Lady Carey Evans, and they so frequently eased the difficulties of wartime that many of us will ever have occasion to remember with deep gratitude the comfortable facilities enjoyed at the "Hotel Ducane." In every respect he was kindness itself, and if he could do a kind action it would be done and it obviously gave him much pleasure. Others can speak of his activities in the hospital Home Guard. Many of his experiences during the bombing must have caused him much anxiety, but he continued to live in the hospital throughout the war. I came to have a great regard for his judgment of humanity and was often struck by the remarkable insight which he displayed into the characters of the numerous members of his team. As a hospital superintendent he took a keen personal interest both in the nursing staff and in the patients, and was always out to add to the efficiency of the services rendered at Hammersmith, of which he was justifiably proud.

Prof. Lambert Rogers writes: The sudden death of Sir Thomas Carey Evans is a shock to his many friends and colleagues, for his was a vivid and cheerful personality with a youthful outlook, and when he gave up his hospital work to settle down to farming in Wales it was expected that he would enjoy some years of quiet retirement. It is over thirteen years since I first met him, in the early days of the British Postgraduate Medical School, when I had the privilege of assisting Prof. Grey Turner in organizing the surgical work. Sir Thomas, then superintendent of the Hammersmith Hospital, Col. Proctor, the dean, and Capt. Scotland, the secretary, formed a triumvirate which gave the administrative side of the school a grand beginning. He was always most helpful and co-operative, ever cheerful—I never once saw him put out or in any way depressed—and, being a surgeon himself, highly sympathetic to our problems. It will be readily understood therefore that he was an ideal superintendent, and it is fitting that it should be put on record how much and how well he served the interests of the Postgraduate School. I have no doubt that this will be done and done more appropriately by others, but I should like to pay this tribute to one who made us feel at home, helped us so adequately, and was a friend to us all at a time when the new Postgraduate School was an innovation and something of an experiment, and when those of us who were the first members of its staff were to a certain extent strangers in a strange land.

Dr. HARRY COOPER died on May 21 at the age of 83. He had been in practice in Surbiton for 52 years, and had been a member of the British Medical Association for the same period.

A colleague writes: After leaving Queen's College, Oxford, where he took a good classical degree, Harry Cooper became a schoolmaster for two years, after which his true vocation sent him to Guy's Hospital at the age of 25. At Guy's he was a successful rugby footballer, being eventually captain of the XV, and also playing for the United Hospitals and Surrey. Qualifications came easily to him, and eventually he proceeded to the D.M. of Oxford. He immediately settled in Surbiton, where he gave to three generations of its inhabitants devoted service such as only a man of his attainments and outlook could give. He was on the staff of Surbiton Hospital, retiring in 1937 as senior medical officer. In 1903 he was appointed medical superintendent of Tolworth Isolation Hospital, where he was in charge for 43 years, a period of continuous service such as falls to the lot of few doctors. Here his clinical acumen and ability in organization had full scope. He was first president of the Surbiton District Nursing Association, an institution very near his heart and one which gained much from his chairmanship. Harry Cooper was a man of many parts. Throughout his long life he kept himself up to date and well informed in all the advances which took place in medical science. He was a staunch churchman, and his outlook was never better exemplified than when his house and practically all his belongings were destroyed by a V1 bomb in 1944. No one who saw the dignity and resolution with which he faced this calamity can ever forget it. The Christian ethic was the mainspring of his life and gave him that serene bearing which was the envy of lesser men. He remained mentally alert to the end, but when he retired from practice it seemed as if the zest had gone out of life and he quietly "folded his tent and stole away." He leaves a widow, three sons, and a daughter. Two of the sons have followed their father's profession.

Dr. HENRY LAING GORDON died at his home in Ngong, Kenya, on Aug. 10 at the age of 81. Dr. Gordon was born at Penrith, Cumberland, in 1865, and qualified at Edinburgh in 1889, proceeding M.D. in 1895. His health had not been good as a student and he was advised to try a sunnier climate. Acting on this advice he spent many years as a general practitioner in Italy, South Africa, and Portugal. He returned to this country in 1918 and was for some time clinical assistant at the West End Hospital for Nervous Diseases. In 1925, at the age of 60, he went to Koru, Kenya, and from there to Nairobi, where he practised as a neurologist until his retirement in 1937. During most of this period he was visiting physician to the Mathari Mental Hospital. He had been a member of the British Medical Association for over fifty years and was president of the Kenya Branch from 1931 to 1933.

J. H. S. writes: I knew Dr. Gordon for twenty years and looked upon him as having the best brain in the profession in East Africa. His laborious work on the mental capacity of certain East African tribes was recognized by his being elected to the consultative council of the Eugenics Society. Special notice should be taken of his work at Mathari, where he transformed an almost mediaeval type of lunatic asylum into a mental hospital which I am informed is without a peer in the African continent.

Dr. FREDERIC JOHN SCRIMGEOUR died at his home in Edinburgh on Aug. 26. Dr. Scrimgeour was a student of Surgeons Hall, Edinburgh, and qualified in 1902. He had spent most of his professional life abroad. He was surgeon to the Tulloch Memorial Hospital, Tangier, and later he became senior surgeon to the British Hospital at Nazareth. For his services as a D.A.D.M.S. Palestine towards the end of the 1914–18 war he was awarded the O.B.E.

Universities and Colleges

UNIVERSITY OF BRISTOL

Albert Victor Neale, M.D., F.R.C.P., has been appointed the first Professor of Child Health and Paediatrics in the University. Dr. Neale is honorary physician to the Birmingham Children's Hospital and the Birmingham United Hospital. He takes up his new duties at the end of this month.

UNIVERSITY OF DURHAM

A Chair of Psychological Medicine has been founded at King's College, Newcastle-upon-Tyne, and Alexander Kennedy, M.D., M.R.C.P., D.P.M., has been appointed as the first holder of the post. Prof. Kennedy was formerly honorary physician in psychological medicine at the Maida Vale Hospital for Nervous Diseases and physician to the Maudsley Hospital, Denmark Hill, London, S.E.

The Services

The King of Norway has bestowed the King Haakon VII Liberty Medal upon the following in recognition of services rendered to Norway during the war: Surgeon Rear-Admiral F. J. D. Twigg, C.B.E., R.N., Surgeon Captain R. W. Higgins, O.B.E., R.N., Surgeon Captain W. P. Vicary, R.N.(ret.), Surgeon Commanders A. E. Flannery and J. M. Holford, R.N., and Surgeon Captain J. B. Ronaldson, O.B.E., V.R.D., R.N.V.R.

No. 33

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 16.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. *Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for:* (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947 (a)	(b)	(c)	(d)	(e)	1946 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	60	6	33	2	2	47	2	14	1	—
Deaths		1	—				2	—		
Diphtheria	145	12	39	8	8	251	19	85	34	5
Deaths	—	—	—		—	3	—	—	—	—
Dysentery	66	10	14	—	—	70	13	32	1	—
Deaths					—				—	—
Encephalitis lethargica, acute	4	1	1	—	—	1	—	—	—	—
Deaths		—					1			
Erysipelas			19	3	—			27	8	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				57					44	
Deaths	66	3	21		1	39	2	10	19	1
Measles*	4,468	229	43	254	6	2,712	255	67	26	3
Deaths	2	—	—		—	6	3	—	—	—
Ophthalmia neonatorum	65	5	15	—	—	56	4	25	—	—
Deaths										
Paratyphoid fever	17	—	1 (B)	—	—	60	1	1 (B)	1 (B)	—
Deaths	—	—	—		—		—	—	—	—
Pneumonia, influenzal	253	9	3	—	3	300	15	1	1	1
Deaths (from influenza)†	3	—	—		—	6	—	—	—	—
Pneumonia, primary			117	11				100	20	
Deaths		15			3		15		3	—
Polio-encephalitis, acute	45	8				1	—			
Deaths		1					1			
Poliomyelitis, acute	646	89	134	10	20	33	3	2	2	—
Deaths		3					—			
Puerperal fever		3	13		1		3	14		—
Deaths										
Puerperal pyrexia‡	127	3	15	2	—	136	6	9	3	—
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	614	54	114	21	26	690	48	119	19	16
Deaths	—	—	—		—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Typhoid fever	8	1	2	2	—	53	2	8	8	—
Deaths	—	—	—		—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Whooping-cough*	1,870	203	64	70	12	2,097	148	40	29	35
Deaths	5	—	2		—	5	—	2	—	—
Deaths (0–1 year)	324	30	50		9	316	30	44	26	10
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,765	536	455		76	3,691	558	481	156	97
Annual death rate (per 1,000 persons living)			9·5					10·6	10·0	
Live births	9,004	1420	1027		241	8,461	1339	1055	489	259
Annual rate per 1,000 persons living			20·7					21·2	31·3	
Stillbirths	253	29	37			274	43	42		
Rate per 1,000 total births (including stillborn)			35					38		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

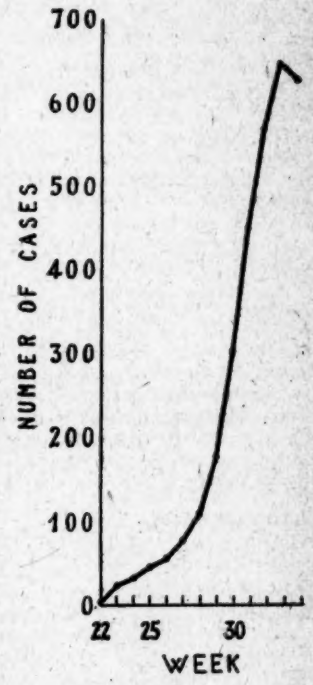
‡ Includes puerperal fever for England and Wales and Eire.

It is still not possible to publish the return of births and deaths for Eire for the weeks ended July 26, Aug. 2, 9, and 16.

EPIDEMIOLOGICAL NOTES

Poliomyelitis and Polio-encephalitis

The number of cases of poliomyelitis notified in England and Wales during the week ended Aug. 23 was 626. This is a slight decrease on the figure for the previous week (646). It is probable that the weekly figures will continue to be of a similar order for many weeks, or possibly for several months, and that the decline in prevalence which is to be anticipated with the approach of winter will not be as rapid as the rise which occurred in June and July, and which is well shown in the graph.



Figures for the county areas compared with those for the previous week (given in parentheses) show that only London 115 (89) recorded a considerable increase. In Durham 33 (39), Lancs 65 (71), Middlesex 36 (32), Surrey 26, (39), Warwick 26 (37), Yorkshire West Riding 49 (44), and Yorkshire East Riding 11 (18) the changes appear to indicate a general tendency either to a temporary stability or to the beginning of a decline.

For the week ending Aug. 16 the rise in the incidence of poliomyelitis in England and Wales was mainly in London and the south-eastern counties, where the notifications increased from 163 to 196, and in the North and West Midland counties, where the number of cases notified rose from 79 to 116. Very little change occurred in other areas.

There were 50 notifications of polio-encephalitis in the week ending Aug. 23, a figure of the same order as those of the two preceding weeks (45 and 56).

Discussion of Table

In *England and Wales* the chief features of the returns were increases in the notifications of whooping-cough 362 and poliomyelitis 78, and decreases in the incidence of measles 1,020 and scarlet fever 66.

The largest local rises in the incidence of whooping-cough were London 47, Lancashire 39, and Essex 38. No changes of any size occurred in the local trends of diphtheria. The only appreciable variation in the incidence of scarlet fever was a decrease in Lancashire 34.

A decline in the number of notifications of measles was recorded in most counties; the largest falls were Lancashire 154, Yorkshire West Riding 133, Devonshire 79, Gloucestershire 77, and London 74.

An outbreak of paratyphoid, involving nine persons, was reported from Bedfordshire; one of these patients has since died. A new outbreak of dysentery occurred in Wiltshire, Pewsey R.D. 19, while no further cases were notified in Kent, where 12 cases were reported in the previous week.

In *Scotland* there was a decrease of 9 in the notifications of diphtheria and of measles. For the second week a large increase was reported in the notifications of poliomyelitis; the figures for the last three weeks were 134, 93, and 37. The largest centres of infection were Glasgow 66 and Ayr County 15; the remaining 53 cases were scattered through 22 registration areas.

In *Eire* the only significant change in the trends of infectious diseases was an increase of 69 for measles; this rise occurred mostly in Dublin C.B. There were 16 more notifications of diarrhoea and enteritis in Dublin C.B. than in the preceding week.

In *Northern Ireland* the notifications of poliomyelitis declined from 33 to 20; these 20 cases involved ten registration areas.

Week Ending August 23

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 489, whooping-cough 1,818, diphtheria 147, measles 3,278, acute pneumonia 233, cerebrospinal fever 49, acute poliomyelitis 626, acute polio-encephalitis 50, dysentery 75, paratyphoid 23, typhoid 12.

Medical News

F.A.O. Conference

Lord Horder leaves for Geneva on Sunday, Sept. 7, to attend the Food and Agriculture Organization Conference. Lord Horder is chairman of the Scientific Advisory Committee on Nutrition. He will be away for a fortnight.

Sir Henry Dale Honoured

The freedom of the city of Dundee was conferred on Sir Henry Dale, O.M., F.R.S., President of the British Association for the Advancement of Science, by the Lord Provost on Aug. 27. Replying to the Lord Provost's welcome, Sir Henry Dale recalled that for the second time in its history the British Association had been honoured by the conferment on its president of the freedom of the city at its annual meeting, and on both occasions it had been Dundee.

Canadian Diploma in Tropical Medicine

A diploma in tropical medicine is given by the Faculty of Medicine, McGill University. During the war years a short course was available to members of the armed Forces. As a result of this experience the curriculum has been revised and additional facilities provided to give medical graduates a broader training for tropical practice. The course is being conducted by the Department of Health and Social Medicine with the collaboration of other departments in the Faculty of Medicine. Further information may be obtained from the Chairman, Department of Health and Social Medicine, 490, Pine Avenue West, Montreal, Canada.

Stracathro Hospital

Stracathro Hospital, near Brechin, will continue to be a general hospital, with special provision for orthopaedic cases, rheumatism, school medical service cases, and children suffering from debility and malnutrition. This decision has been reached by the Rt. Hon. Joseph Westwood, M.P., Secretary of State for Scotland, after discussions between the Department of Health for Scotland and the other hospitals and local authorities in the area. It has also been decided that it will not be practicable at present to use the hospital for cases of pulmonary tuberculosis. Stracathro, a large hospital set up to deal with war casualties, is a general training school for nurses, both men and women, and also provides an intensive one year's training for ex-Service orderlies who wish to become State-registered nurses.

Rheumatology Unit

The Royal Free Hospital Unit of Rheumatology has now been formed, with its in-patient department at the North-Western Hospital, Lawn Road, Hampstead, N.W.3, the out-patient department being, as formerly, the Arthritis Clinic of the hospital in Gray's Inn Road, London, W.C.1. Doctors wishing to see the unit, or to refer patients to it, are asked to telephone the Arthritis Clinic at Terminus 4331 (Extension 73).

Chinese Pharmacists

Seven Chinese students who have all graduated as bachelors of pharmacy were recently given a dinner to mark the termination of their two years' course. Mrs. J. K. Irvine, president of the Pharmaceutical Society, presided and was supported by representatives of each of the manufacturing houses which had "adopted" a student. Dr. Chen from the Chinese Embassy was present at the dinner and so was Mrs. Kitchingham of the British Council and other distinguished guests. Mr. A. H. Bentley, Government pharmacist in Hong Kong when the Japanese entered the war, was taken prisoner and escaped with the aid of Chinese friends who, at the risk of their own lives, befriended him until he reached Chungking. When Mr. Bentley returned to England in 1944 he approached the Pharmaceutical Society and the British Council with the idea of establishing scholarships for Chinese students to come over here for training as teachers. Through the generous aid of seven of the large manufacturing houses this was made possible. Mrs. Irvine congratulated the students and thanked the seven firms and the British Council for their co-operation.

Vaccination for Travellers to U.S.

The U.S. Health Authorities have issued an order prohibiting the entry into the United States of any passenger who has not been vaccinated within the past three years.

Welsh National School of Medicine

Prof. R. M. F. Picken has been appointed Provost of the Welsh National School of Medicine. He will combine the duties of Provost with those of Mansel Talbot Professor of Preventive Medicine.

COMING EVENTS

Poliomyelitis

The Kingston-on-Thames Division of the B.M.A. has arranged a special meeting to be held on Wednesday, Sept. 10, at 8.30 p.m., at the Kingston County Hospital, when the subject will be "The Early Diagnosis of Acute Anterior Poliomyelitis." The Ministry of Health film will be shown and a discussion will follow on the aetiology, diagnosis, and treatment of the condition, to be introduced by Drs. H. Ellis, A. A. Cunningham, and others.

Poliomyelitis Film

There will be a showing of the Ministry of Health film, "The Early Diagnosis of Anterior Poliomyelitis," at the County General Hospital, Wakefield, on Wednesday, Sept. 10, at 8 p.m. General practitioners are invited to attend.

Control of Tse-Tse Fly in South Africa

A meeting will be held at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C., on Wednesday, Sept. 24, at 2.30 p.m., to discuss "D.D.T. and the Aeroplane in the Control of the Tse-Tse Fly and Trypanosomiasis in South Africa." A colour-sound film prepared by the staff of the Onderstepoort Laboratory, Pretoria, will be shown and introduced by Dr. P. J. du Toit, director of veterinary services, Union of South Africa. All interested in the subject are invited to attend the meeting.

Royal Sanitary Institute

A meeting of the Royal Sanitary Institute will be held at the Civic Centre, Southampton, on Saturday, Sept. 27, at 10 a.m., when papers will be read on "The Welfare of the Shop Assistant" and "Venereal Diseases, Past, Present, and Future" by Mr. B. T. Tanner and Dr. R. M. Warren respectively.

William Blair-Bell Memorial Lectures

The Royal College of Obstetricians and Gynaecologists (58, Queen Anne Street, London, W.) announces that the William Blair-Bell Memorial Lectures for 1947 will be delivered in the College House on Nov. 14, at 5 p.m., and on Jan. 23, 1948, at 5 p.m. The first lecture will be delivered by Dr. D. J. MacRae, on "Heart Disease in Pregnancy," and the second lecture by Dr. Stanley A. Way on "Primary Carcinoma of the Vagina." All medical practitioners interested in the subjects are invited to attend the lectures, but admission is by ticket only, obtainable from the secretary. Tickets will be allotted in order of application, and applicants are asked to indicate for which lecture tickets are required.

SOCIETIES AND LECTURES

SOCIALIST MEDICAL ASSOCIATION.—At Denison House, 296, Vauxhall Bridge Road, S.W., Friday, Sept. 12, 7.30 p.m., Dr. Judith Waterlow. Reconstruction of the Health Services in Greece and Yugoslavia.

A course of six lectures on thoracic surgery will be given at the Medical Society of London (11, Chandos Street, Cavendish Square, W.) on Saturdays, Sept. 13 and 20, Oct. 4, 11, and 25, and Nov. 1, at 11 a.m. The course is designed for candidates for higher degrees and will be given by the chief assistants to the Harefield Thoracic Surgery Unit, of which Mr. T. Holmes Sellors and Mr. Vernon Thompson are the senior surgeons; it is limited in numbers and the fee is £6 6s. Applications, with remittance, should be sent to Mr. K. S. Mullard, F.R.C.S.Ed., "Wykeham," Elgood Avenue, Northwood, Middlesex.

The Royal College of Obstetricians and Gynaecologists (58, Queen Anne Street, London, W.) has arranged a postgraduate course of advanced lectures for those studying the special practice of obstetrics and gynaecology to be given in the College House from Monday, Nov. 17, to Friday, Nov. 21, at 5 p.m., both dates inclusive. The fee for the course is £2 2s. (10s. 6d. for a single lecture). A small number of tickets will be available free of charge to Fellows and Members of the College and will be allotted in order of application. There will be no admission without tickets, which are obtainable from the secretary.

BIRTHS, MARRIAGES, AND DEATHS

The charge for an insertion under this head is 10s. 6d. for 18 words or less. Extra words 3s. 6d. for each six or less. Payment should be forwarded with the notice, authenticated by the name and permanent address of the sender, and should reach the Advertisement Manager not later than first post Monday morning.

BIRTH

HUTCHISON.—On Aug. 28, 1947, to Nan E. (*née* Niblett), wife of J. B. Hutchison, F.R.C.S., 8, Lynedoch Place, Glasgow, C.3, a son.

MARRIAGE

GOUGH—LEE.—On Aug. 26, 1947, at St. John's Church, Torquay, Major C. W. C Gough, R.A.M.C., to Major Clara Lee (*née* Burgess), R.A.M.C.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Whooping-cough Immunization

Q.—*What is the present position of immunization against whooping-cough?*

A.—Good reviews on the present position regarding active immunization against pertussis have recently been given by Felton and Willard in the U.S.A. (*J. Amer. med. Ass.*, 1944, 126, 294) and by Tudor Lewis in this country (*Med. Off.*, 1946, 76, 5). Lewis concludes from his study of the literature that "given a potent vaccine a reduction of the attack rate to about one-third with a diminution in the severity of the clinical cases and a substantial reduction in mortality may well be expected." The operative phrase is obviously "given a potent vaccine," just as we depend on a good antigen for effective immunization against diphtheria. This aspect of the problem is now receiving considerable attention from laboratory workers, and methods of assay of antigenic potency in experimental animals have been devised. Controlled trials of American and British vaccines are being carried out by the Medical Research Council, but it is too early to say how effective these vaccines are. There is some evidence that an alum-precipitated is more effective than a "straight" vaccine, but it would be unwise for a medical officer of health to recommend large-scale inoculations against pertussis until more information is available about the efficacy of the vaccines at present in use.

Hypothyroidism

Q.—*What are the early symptoms and signs of hypothyroidism?*

A.—In the infant there would be a retardation of the ordinary developmental stages, coupled with dryness of the skin, cretinoid facies, and umbilical hernia; in childhood myxoedema there would be retardation of growth and puberty and the other features of adult hypothyroidism; in adult myxoedema the onset may be sudden or insidious, and, although there is no regular presentation of early features, sensitivity to cold and loss of the hair of the head and outer eyebrows are often early signs. Retardation of mental processes is not invariable, but may be an early sign observed by friends.

Hypothyroidism, as distinct from myxoedema, may be secondary to a pituitary lesion—for example, Simmonds's cachexia after pregnancy—and in such circumstances early features may be absence of lactation, failure of reappearance of menstruation, weakness, and sensitivity to cold.

Infantile Eczema

Q.—*What is the most effective treatment for infantile eczema? Would injections of vitamin B_1 be helpful?*

A.—Coal tar in a paste or ointment is most effective in infantile eczema, and soap and water should be avoided. Injections as a rule are undesirable, but vitamin B and liver are sometimes of value. Most helpful is potassium bromide 5 gr. (0.32 g.) thrice daily in a rhubarb-and-soda mixture or phenobarbitone in 1/4-gr. (16-mg.) doses. These infants are emotionally and nervously hypersensitive and readily react by itching. Attention should be given to the environment and the mother–child relationship from the psychological point of view.

Cod-liver Oil for Adults

Q.—*Many elderly people now take cod-liver oil to make up for the shortage of fats. What is the appropriate dose for adults? Is it harmful when taken over a long period, and, if so, what are the symptoms?*

A.—Cod-liver oil is not to be regarded as a medicine but as a food. There is no appropriate dose, just as there is no appropriate dose for butter. It is not harmful when taken over a long period. Before vitamins were heard of cod-liver oil had a reputation as the best preventive of bronchial affections, and it remains a good treatment for chronic bronchitis when the patient cannot live in a dry climate. The only symptoms which can result from taking too much cod-liver oil are those of acidosis; but as loss of appetite is one of the earliest this should cure itself. The fear of excessive doses of vitamin D has now been shown to be groundless.

Bequest of Body for Dissection

Q.—*A patient is desirous that his body should be given for dissection to the nearest medical school. Could you inform me on the following points: (1) What steps should be taken to ensure that his relatives do not upset his wishes after death? (2) Should he notify the medical school now of his intentions? (3) When he dies what are my responsibilities (in order that his wishes may be respected) (a) to the coroner, (b) to the deceased, (c) to the medical school? (4) Will the medical school defray the cost of transporting the body?*

A.—As there is no property in a corpse, a bequest of one's own body has no validity. If the relatives, who are responsible at law for the disposal of the body, override the wish of the deceased, there is nothing to be done. The utmost the patient can do now is to try to get the relatives to promise to carry out his wishes. There may be no harm in informing the authorities of the medical school, but they cannot acquire any rights over the corpse. After the death the practitioner has, if the death was due to natural causes, no responsibility to the coroner. His only responsibility to the deceased and to the medical school is the sentimental one of doing his best to persuade the relatives. It certainly seems reasonable that the medical school, who are getting what *ex hypothesi* is valuable material, should defray the cost of transport. Fuller details will be found in an article by Dr. N. M. Goodman in the *Journal* of Dec. 23, 1944 (p. 810).

Bilateral Adrenalectomy in Hypertension

Q.—*I have never read of the performance of bilateral adrenalectomy followed by maintenance doses of cortin in cases of essential hypertension, and, while I cannot claim to possess special knowledge of the subject, it would appear worthy of trial, especially in view of the grave prognosis in severe hypertension.*

A.—Bilateral adrenalectomy would not be indicated for two reasons: (1) the adrenals are not the usual cause of essential hypertension, and (2) life can be maintained only precariously by substitution therapy after bilateral adrenalectomy. Substances in the blood that produce vasospasm do not necessarily have their origin in the adrenal glands, and some are thought to arise from the kidney itself. In acute adrenal insufficiency the blood flow through the renal glomeruli is decreased and anuria may occur. Of course it is well known that phaeochromocytomas (adrenal medullary tumours) may cause both chronic hypertension and superimposed hypertensive crises, and are usually unilateral. In such circumstances the removal of the tumour produces cure. A case of this kind was recorded in the *Journal* of April 26, 1947, at page 563.

Protection against Tetanus

Q.—*My boy, aged 2, repeatedly scratches his legs by falling on the garden paths. He had one dose of A.T.S. some time ago. Is the risk of giving A.T.S. each time greater than the risk of tetanus? Is it possible, and safe, to actively immunize a child so young?*

A.—The risk of tetanus from superficial scratches and abrasions sustained by children in gardens or playgrounds is minimal. Tetanus antitoxin would ordinarily be prescribed only for the deep penetrating wound or severe injury. However, a child may readily be protected against the risk of tetanus by active immunization with tetanus toxoid, which obviates the need for, and attendant risks from, repeated injections of antitoxin. Active immunization was used as a routine during the war for all our armed Forces and resulted in a remarkable reduction in the incidence of tetanus among wounded men. It is now being increasingly used in paediatric practice in the U.S.A. along with diphtheria immunization. Two 1-ml. doses of tetanus toxoid (obtainable commercially) are given at six weeks' interval, and if desired a boosting dose may be given a year or more later. There are no reactions and the protection

is lasting compared with the temporary protection given by the injection of tetanus antitoxin.

Penicillin-sensitivity

Q.—*What is the prospect of a reaction to the parenteral administration of penicillin in a case where glossitis followed the use of penicillin lozenges and a severe dermatitis occurred after the application of penicillin cream and ointment? Would the use of pure penicillin lessen the tendency to reaction?*

A.—Glossitis is not necessarily due to penicillin itself; it may be due to the lozenge base, since it appears to be commoner with lozenges than with the original gelatin pastilles. The same explanation is possible, although less likely, in connexion with dermatitis following the use of an ointment or cream. Assuming that the patient is sensitive to the drug itself, the use of pure penicillin is not likely to overcome this; many such patients have been found to be sensitive to the pure product as well as to the impure commercial material. O'Donovan and Klorfajn (*Lancet*, 1946, 2, 144) desensitized a patient by giving 15,000 units by mouth several times a day for a fortnight. If parenteral administration is urgently indicated in such a case it should certainly not be withheld.

Chronic Glaucoma

Q.—*What is the best treatment for a male patient of 70 with chronic primary glaucoma? He has been treated with pilocarpine for the past four years, but the vision is deteriorating—the right eye being blind, while there is only some central vision in the left. He refuses surgical treatment.*

A.—Pilocarpine is obviously not controlling the tension in this patient. Presumably drops in a concentration of 1% are being used three times a day. More frequent instillation may be helpful, and gutt. physostigmin. sulphas. 0.5%, or even 1%, may have to be used. The essential thing is to find out by actual measurement whether the tension can be controlled by pilocarpine or physostigmine, what concentration is necessary, and how frequenly applications are to be made. It is possible that no miotic will control the tension in this patient. In such circumstances the only alternative to operation is irremediable blindness. There are newer remedies that can be employed to tide over an acute emergency. These are useful pre-operative measures, but have no place in the treatment of chronic glaucoma.

Urinals

Q.—*Can you recommend a fool-proof urinal for night use in bed? The usual rubber urinal is useless in the recumbent position.*

A.—We know of no really satisfactory urinal for use in the recumbent position. Most patients who suffer from incontinence sleep either with a urine bottle between their legs or else with a large pad of cotton-wool. Nothing is said in the question about the cause of the incontinence. If it is due to impairment of sphincter control in the male a penile clip may prove effective. This is a clip which exerts sufficient pressure on the penile urethra to prevent the dribbling away of urine. When the bladder contains enough urine to make it necessary to void, the patient is awakened and micturates.

Sterilization of Syringes

Q.—*At a hospital where the water supply contains a large quantity of lime salts, syringes and instruments boiled in the ordinary sterilizers come out covered with a film of precipitated chalk. Can this be prevented harmlessly by adding sodium hexametaphosphate or some other chemical to the water in the sterilizer? Any practical suggestions would be appreciated.*

A.—This question is dealt with in "The Sterilization, Use, and Care of Syringes" (M.R.C. War Memo No. 15), where it is mentioned that sodium hexametaphosphate, although preventing chalk deposit, "may precipitate alkaloidal solutions, and, by combining with protein, may affect serum reactions." Since syringes are perhaps more often used either for administering drugs or for withdrawing blood than for any other purposes, these are serious objections. A carboy of distilled water costs only a few shillings and will last a long time; rain-water is a possible alternative.

NOTES AND COMMENTS

Treatment of Cataract.—Dr. SYDNEY TIBBLES (London, W.) writes: Dr. Ronald Kerr (Aug. 2, p. 196) rightly objects to the answer given in the *Journal* of June 21 (p. 911), which implies that any treatment other than surgical for cataract is futile. True, one can only get rid of a mature cataract by removing it surgically from the eye, although in the East they used to depress them out of the line of vision. The late Col. Elliot wrote a book on the evils of "couching" as it was called. For years past fully a quarter of my patients have been people with cataract. Those ready for operation were treated accordingly. However, I have people still coming after twenty and even thirty years' treatment by iodides who still require no operation, which must be the experience of many of my colleagues. There is no secret in it, as years ago we used a French ointment of calcium iodide, but with the cutting off of supplies during the war we either fell back on home products, similarly manufactured, or used potassium iodide as drops, or some similar preparation. We also use iodides in chronic rheumatism, bronchitis, and other conditions, and they appear to be of use clinically. As we hardly know the *modus operandi* of such drugs, nor of the sulphonamides or of penicillin, surely they cannot be condemned as scientifically futile—science presumably meaning systematic, i.e., according to plan, or formulated knowledge. Certainly the proportion of cases I have to operate on is very small compared with the large number of early cataracts seen. The scientists tell us that such changes in the lens cannot be "reversed," which belief I held till one day I met socially an old patient whom I thought had deserted me. She explained that, after years of treatment, she was convinced that she was entirely better, which was borne out at a further examination, when I found that the lenses had become completely clear again. I however had to operate on both eyes when she was in her late seventies, ten years later. Prior to the recent war there were many nature-cure homes in the country that specialized in the treatment dietetically of cataract. In 1930 I had the interesting experience of operating in one of them on a lady with a mature cataract of one eye. She had been kept on orange juice and a low diet, mostly vegetable, but in spite of my scepticism of such treatment by diet she was up and out for a walk at the end of seven days. Now I hold no brief for special diets in such cases, but her blood stream must have been pretty pure. For one patient requiring operation there are myriads who have cataract in various stages. If these can be kept as they are, without being allowed to degenerate further, that must surely be a great comfort to the patient. It certainly is more spectacular to make a blind eye see by means of an operation, but Dr. Kerr is quite right in stressing all the alternatives; and, after all, why should not everything be tried if it will give any relief to the patient? Finally, I hope nobody will get the impression that I am advocating nature-cure methods, as I have had no time for treatment by diets, ionization, or the many things suggested, but have merely used iodides in some shape or form, as, after thirty-odd years of seeing such cases, I am convinced that they do prevent early cataracts from becoming worse. It is very unscientific to say we do not know how, but possibly they act like other alteratives in stimulating metabolism.

Sweating Hands.—Lieut.-Col. S. S. VAZIFDAR, I.M.S.(ret.) (Berkhamsted, Herts), writes: With reference to the reply under the heading "Sweating Hands" (Aug. 16, p. 281), I would confidently recommend, if the young lady's examination be not over, that she be given intravenously 3 ml. of a 10% solution of NaCl. Over ten years ago I saw a girl of 17 from whose palms sweat dripped as water from a tap. The effect of one injection lasted for about a week, when it was repeated.

Correction.—Lieut.-Col. J. G. FOSTER writes: In your obituary notice of the Indian Medical Service (Aug. 23, p. 300) you mention, as a member of that Service, Timothy Lewis, but he was a member of the Army Medical Service, and is shown in Johnston's *Roll*. There is no mention of Timothy Lewis in Crawford's *Roll of the I.M.S.* Lewis's name was Timothy Richards Lewis.

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